

DISPOSAL OF PCB CONTAMINATED LIQUIDS BY THE TEXAS EASTERN GAS PIPELINE COMPANY

HEARING
BEFORE THE
SUBCOMMITTEE ON
SUPERFUND AND ENVIRONMENTAL OVERSIGHT
OF THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDREDTH CONGRESS
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TUESDAY, MARCH 17, 1987

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON SUPERFUND
AND ENVIRONMENTAL OVERSIGHT,
Washington, DC.

The subcommittee met at 9:35 a.m. in room SD-406, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman of the subcommittee) presiding.

Present: Senators Lautenberg, Warner, and Pressler.
Also present: Senator Breaux.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. I call the meeting of the subcommittee to order. Today marks the first hearing of the Superfund and Environmental Oversight Subcommittee of the Environment and Public Works Committee.

I welcome my distinguished colleague from Virginia, Senator Warner, who is the ranking minority member of this subcommittee, as well as another member of the full committee, Senator John Breaux from Louisiana, not a member of this subcommittee but who asked to join us today. We welcome him here.

All of us on this subcommittee share a common goal; to see that our environmental laws are vigorously enforced and fully implemented. The troubling patterns of mismanagement in the Superfund program have shown us that these laws are only as strong as the commitment of those charged with the enforcement of them. When that commitment wavers, the Nation's health and environment suffer.

In the bipartisan spirit for which this committee is known, the subcommittee is going to push for a strong and constant commitment to environmental protection. That is why we are here today, to review the case of a company that dumped PCB-contaminated liquids in sites across the Nation while EPA seemed to be asleep at the wheel.

We are all relieved to learn last night of new test results in West Amwell, New Jersey. The second round of tests indicated no detectable level of PCBs in any of the homes originally found to have well contamination. More tests are scheduled and should be scheduled, to confirm these new findings. We all hope that those tests

will continue to show no PCBs. We regret that apparently shoddy lab procedures have subjected the residents to an emotional roller coaster.

While these new tests indicate the wells in question may not be contaminated, we still have a case of significant environmental pollution and apparent trouble in EPA's management. The more we examine the facts, the more disturbing the questions become.

Consider just the following findings thus far of the subcommittee. In 1981, Texas Eastern admits discovering PCBs in its pipeline liquids. The company signs a Consent Agreement with EPA in 1982. Yet, despite that agreement, Texas Eastern appears to have continued to dump the contaminated liquids into land pits.

In 1985, Texas Eastern's sister company pays EPA Region IX a \$125,000 fine for dumping PCB wastes in pits in Arizona. The alarms certainly should have gone off then. Texas Eastern's eastern pipeline should then have been checked. EPA apparently did not do that.

In August 1985, Texas Eastern itself comes forward, not quite far enough but comes forward, tells EPA about its PCB-contaminated pits. But neither the company nor EPA tells the public or State officials. In August 1985, the public and the States are still very much in the dark.

In November 1985, the company provides EPA with locations and details of PCB pits across the Nation, including the sites in West Amwell and Linden, New Jersey. Yet EPA sits on the information. The public sits on PCBs.

In April 1986, EPA headquarters provides Region II through Region VII with detailed information about the pits. Headquarters suggests that the regional hazardous waste offices follow up. But apparently little or no followup occurs, and the States are not informed.

In June 1986, EPA's Assistant Administrator for Pesticides and Toxic Substances writes an intraagency letter. He tells the agency's top enforcement attorney that a criminal investigation may be warranted. Yet today, 9 months later, there is no enforcement action.

In February 1987, the story breaks in the media, 18 months after the company told EPA of PCB pits, 18 months after EPA knew that PCBs lay in the ground, perhaps near water supplies. Eighteen months later, State officials and the public learn of the problem, not from EPA, not from the company but from the newspapers.

That is what we know thus far. These facts suggest disregard for public health and safety. We see a company that dumps PCB wastes, a company that may have continued to dump even after signing a consent agreement. We see EPA possibly asleep at the wheel. It does not discover that the consent decree may have been violated until recently, then issues followup instructions to its regions but they do not appear to have acted. The agency's program people recommend criminal investigations to its enforcement personnel but do not bring suit.

These facts raise serious questions. Why did EPA sit still for 19 months after knowing about PCB-laden pits? Why did not it or the company inform the public? And why were the wells in West

Amwell not tested as soon as the agency knew of the pits there? What will be done to clean up these contaminated sites? And how pervasive are and were these dumping practices either by this company or by others?

Today, it is time to start getting answers, to get to the bottom of what happened, to assess if changes must be made not just to our laws but to the basic operation of EPA, to determine just what must be done to assure the public that this cannot happen again.

At this point I would like to ask my colleague from Virginia, Senator Warner, if he has an opening statement.

Senator WARNER. Thank you, Mr. Chairman. I have a brief observation that this is a new subcommittee, and it is timely for the Senate to establish the subcommittee so that we can provide oversight for the enforcement of those laws providing for better environment. It is a troubling case, as you have pointed out, and we shall reserve judgment until there has been an adequate opportunity for all interested parties to present their perspectives into evidence.

I welcome you as chairman and pledge to you a strong bipartisan working relationship in the enforcement of our environmental laws. I see waiting our distinguished colleague from Arkansas.

Senator LAUTENBERG. Thank you, Senator Warner.

Senator Breaux, do you have an opening statement you would like to make?

OPENING STATEMENT OF HON. JOHN B. BREAU, U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator BREAU. Thank you, Mr. Chairman. Although I serve on the full committee, I am not a member of this subcommittee and I appreciate the opportunity to participate. I too would join with Senator Warner in saying how important this issue is, how important that you have decided to call hearings in this matter.

The recent disclosures of PCB contamination along certain interstate natural gas pipelines has provoked, obviously, considerable interest and considerable concern in my State of Louisiana, which has over 40,000 miles of natural gas pipelines within our State borders alone.

It is important that we respond to the newspaper reports. It is time that we respond to the concerns of the people who are expressing absolute fear by what they read in the paper. They want some answers, and I think that your hearing today is a first step towards establishing some of those answers that all of us are looking for.

I am pleased that our new head of the Louisiana Department of Environmental Quality, Martha Madden, will be testifying, showing the concern of our particular State in this matter.

Frankly, Mr. Chairman, I have made no secret of my displeasure over the manner in which this whole issue has been handled by the U.S. Environmental Protection Agency. As the facts surrounding the current headlines have come to light, I have been very concerned about the shortcomings of the agency's regulatory program. I think that that shortfall shares a large measure of the blame for the fact that only today are we discovering the extent of the PCB-

contamination problem along thousands of miles of gas transmission pipelines in this country.

I certainly do not mean to suggest by my remarks that I have been convinced that Texas Eastern or any other gas pipeline company is without some degree of culpability in the matter. Indeed, depending on how the testimony that we receive today addresses some of the questions raised by the facts that have been gathered to date, it could well be that much more than what I have so far termed 'regulatory negligence' is to blame for these most troubling revelations of widespread PCB contamination.

It is not the purpose of these remarks to point fingers nor to assess blame. I, for one, am willing to let the fact-finding process run its course and let the chips fall where they may.

However, Mr. Chairman, I find it absolutely inconceivable that an agency can conduct what amounts to essentially two industry-wide investigations and rule-makings without someone knowing that PCB-contaminated pipeline condensate was being blown into unprotected earthen pits and that this practice was not protective of the human health and the environment.

Our first priority in the hearings this morning is to ascertain the extent of the human health problems associated with these revelations and to assure the public that steps are swiftly being taken to address what are completely understandable concerns.

We should not lose sight of the fact that your subcommittee, Mr. Chairman, is going to vigorously pursue the causes of today's headlines, to ensure that EPA is effectively implementing the laws of this land and that the impact of industries are in good-faith compliance with the law.

Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you, Senator Breaux.

Senator Pressler has joined us. Senator Pressler, do you have a statement to make?

OPENING STATEMENT OF HON. LARRY PRESSLER, U.S. SENATOR FROM THE STATE OF SOUTH DAKOTA

Senator PRESSLER. Yes, Mr. Chairman. I would like to say thank you, first, for scheduling this hearing of the Superfund and Environmental Oversight Subcommittee to examine the disposal of PCB-contaminated waste by Texas Eastern Gas Pipeline Company.

I might say that many small cities and towns across the United States have had a similar problem. In fact, in my home State just this morning in our leading newspaper, I read: "Agencies may pay twice for PCB cleanup." Sixteen South Dakota institutions paid to have a cleanup, and the company from Kansas City went bankrupt. The cleanup did not occur properly. Now they have to pay for it again, apparently.

As I understand, under Federal law, agencies that generate PCBs are responsible for them forever, even if they have paid another company to dispose of them. So now 16 South Dakota institutions are among the 700 cities and companies nationwide that paid Rose Chemicals to dispose of their PCBs.

So the point is this is also a problem in South Dakota; it is a problem on the front page of my newspapers this morning in small

cities and towns. We also have another issue of a spill that just occurred last week on another matter. So this is not something that is just isolated in the big cities or big metropolitan areas of America. Sometimes it affects small towns and counties, which have the greatest difficulties in disposing of matters.

In any event, the focus today is on the recent news of Texas Eastern Gas Pipeline Company's dumping of PCB-contaminated wastes at 68 sites in 12 States is very alarming and merits a congressional inquiry.

PCBs were primarily used in electrical equipment, such as transformers, and as a lubricant for natural gas pipeline compressors. PCB has been found to cause cancer and other illnesses. As a result of this finding, strict limitations were placed on PCB in 1976 under the Toxic Substances Control Act.

By 1978, the manufacture, processing, and distribution of PCB was strictly limited and carefully regulated by the Environmental Protection Agency. In 1979, special disposal rules for PCB went into effect. The regulations on the disposal of PCB have created problems for many groups.

For example, a small number of rural electric cooperatives, cities and small businesses in my home State of South Dakota contracted with Martha C. Rose Chemicals Incorporated to dispose of its waste-containing PCBs. Unfortunately, the company filed bankruptcy, and now these small towns and electrical cooperatives are still liable for the disposal of this material. These groups are faced with the possibility of having to pay for the disposal of the waste twice. Over 700 cities and companies have paid this company to dispose of PCB-contaminated wastes. Some pipeline companies are probably involved in this problem.

I hope this hearing will give the subcommittee an idea of the widespread nature of this problem of improper disposal of PCB and what can be done to facilitate the proper disposal of PCB-contaminated wastes.

Mr. Chairman, I look forward to hearing the testimony today. I shall be at this committee and three other committees that are going on. I ask unanimous consent to place in the record the newspaper article regarding the PCB spills in South Dakota and the problems some of our small cities and REAs and companies are having who have paid once and are now being asked to pay twice.

Mr. Chairman, although I know your hearing is focused on one particular problem, I would remind the environment groups and committees that it is also very much a timely problem in small towns in South Dakota, as of this morning's newspaper.

Senator LAUTENBERG. Thank you, Senator. Without objection, the request to put the article mentioned into the record will be honored.

[The newspaper article referred to follows:]

AGENCIES MAY PAY TWICE FOR PCB CLEANUP

(By James Grass)

Sixteen South Dakota institutions may have to pay thousands of dollars to help clean up a toxic site left by a failed Missouri hazardous waste disposal company.

The state agencies all shipped PCB-contaminated materials to Martha C. Rose Chemicals Inc., in Kansas City, Mo., for disposal. The company went bankrupt last

week, leaving federal officials to clean up 6 million to 10 million pounds of PCB-contaminated liquids and solids on a 13-acre treatment site in Holden, Mo., about 40 miles southeast of Kansas City, Mo.

Under federal law, agencies that generate PCBs are responsible for them forever, even if they have paid another company to dispose of them. Sixteen South Dakota institutions were among the 700 cities and companies nationwide that paid Rose Chemicals to dispose of their PCBs.

South Dakota officials are concerned that they will have to pay to clean up a problem they thought had been addressed. Officials also criticized the federal Environmental Protection Agency for not warning them the firm was in trouble.

The EPA licensed the company.

"We're going to end up paying again for what we already had paid to be destroyed," said Dave Padgett, director of public works for the city of Pierre.

Pierre paid Rose Chemicals about \$20,000 to destroy 26,000 pounds of PCB-contaminated equipment between 1982 and 1985, Padgett said. The city received notification that the material was safely destroyed, but was recently informed by the EPA that it was still liable.

"Martha Rose Chemicals was sending us destruction notices, which we're required to have. That should have been the end of it, except that the destruction notices aren't worth the paper they're printed on," Padgett said.

Pierre may have to pay about \$26,000 to clean up its share of the dump, he said.

PCBs, or polychlorinated biphenyls, are a toxic chemical that was commonly added to electrical delivery equipment. The chemical was later linked to cancer, birth defects and liver damage in laboratory animals and the federal government now mandates that all firms dispose of PCBs in an approved manner.

Martha Steincamp, assistant regional counsel for the EPA in Kansas City, declined to say how much it would cost to clean up the dump site, but estimates range from \$20 million to \$40 million.

Kansas City lawyer James Anderson, who represents Rose Chemicals, declined to comment.

Major generators of PCBs, that hired Rose Chemicals have formed a steering committee to oversee the cleanup. Most South Dakota firms involved have sent money to the steering committee.

Cleanup may take several years, Steincamp said.

"I think businesses and municipalities in every state in the union sent stuff down here," she said. "It's a bad situation. It's quite a big deal."

The FBI is investigating the company to determine what happened to the money paid for disposal, Steincamp said.

Other South Dakota institutions involved in the dump site include:

The South Dakota School of Mines and Technology, which paid Rose Chemicals \$2,500 in March 1985 to dispose of seven electrical transformers weighing about 5,000 pounds. It may cost the schools \$5,000 to \$6,000 more to clean up the dump site.

The city of Brookings, which shipped 750 pounds of electrical capacitors in 1982 to a company connected to Rose Chemicals, paying about \$2,000 in disposal costs. Rose later took over the company, and Brookings is being held liable for its shipment.

Northern Electric Cooperative of Bath, which paid about \$700 to dispose of 220 gallons of contaminated oil in 1985. The company never received a notice of destruction.

The city of Flandreau, which paid \$768 to dispose of 952 pounds of contaminated capacitors in September 1983. It may cost the city \$1,500 to \$2,000 to clean up its share of the dump site.

"We had no way of knowing this company wasn't reliable. They were EPA-approved and licensed, and we thought that was sufficient. It turned out it didn't count for anything," Don Johnston, city light and power superintendent, said.

SIXTEEN INSTITUTIONS INVOLVED

Here is a list of South Dakota institutions which the federal Environmental Protection Agency says shipped PCB-contaminated material to Martha C. Rose Chemicals Inc. for disposal:

- Burke Light and Power, Burke.
- Lincoln-Union Electric Co., Alcester.
- Clay-Union Electric Corp., Vermillion.
- Sioux Valley Co-op, Watertown.
- Hills Materials Co., Rapid City.

Watertown Municipal Utilities, Watertown.
 Vermillion City Light and Power, Vermillion.
 Flandreau Light and Power, Flandreau.
 Jerry's Electric, Colman.
 Northern Electric Co-op Inc., Bath.
 Rosebud Electric Co-op Inc., Gregory.
 Pierre Municipal Power and Light, Pierre.
 Helper Inc., Madison.
 South Dakota School of Mines and Technology, Rapid City.
 Sioux Valley Empire Electric Association, Colman.
 Brookings Municipal Utilities, Brookings.

Senator LAUTENBERG. We are pleased now to welcome our distinguished colleague from Arkansas, Senator Bumpers.

Senator Bumpers, welcome, and please go ahead with your statement.

STATEMENT OF HON. DALE BUMPERS, U.S. SENATOR, FROM THE STATE OF ARKANSAS

Senator BUMPERS. Thank you, Mr. Chairman. And thank you very much for holding this hearing.

On the morning of February 21 of this year I saw the story in the Post where it was revealed that Texas Eastern Pipeline Co. had been dumping PCBs in my State as well as 11 other States along a 10,000-mile pipeline.

I was alarmed to see that several of these sites were in my State and I immediately wrote to the chairman of this committee and the chairman of the Energy Committee requesting them to hold hearings immediately to try to find out precisely what has happened.

This morning this subcommittee, which has the prime responsibility for making a decision and uncovering the answers to questions, has moved expeditiously. I want to thank you very personally and on behalf of the people of my State for your prompt attention.

The article revealed that there were 68 compressor sites along a 10,000-mile natural gas pipeline from Texas to New Jersey. The Texas Eastern Gas Pipeline Company, it was discovered, had disposed of PCB-contaminated liquids removed from the pipeline by dumping them into earthen pits dug at the sites.

In the days following the first Post article, the public was informed that other pipeline companies had disposed of contaminated fluids in the same manner along their pipelines. After months of silence on this potentially tragic situation, both EPA and Texas Eastern, pursuant to this revelation, have provided literally a flood of information to Congress, the States and the public during the past few weeks.

Given the fact that exposure to PCBs has been linked to so many very critical and terminal illnesses, the information provided is certainly long overdue.

PCBs were first introduced into commerce in the 1920s and, because of their lubricating and fire-retarding qualities, were widely used over the next 50 years. PCBs were mainly used in electrical equipment such as the large electrical utility transformers. Natural gas pipeline companies use lubricants containing PCBs in their pipeline compressors which push natural gas through the pipeline.

Due to evidence collected in the late 1960s and the early 1970s that PCBs do not readily decompose in the environment and pose severe health and environmental threats, their manufacture and use were severely curtailed. Congress acknowledged the dangerous nature of these compounds when in 1976 it passed the Toxic Substances Control Act.

I might digress here just a moment to say, Mr. Chairman, that the Senator most responsible for the passage of TSCA, who was later defeated and who is no longer with us, has never received the full credit he should have gotten for his efforts. Senator John Tunney from California worked tirelessly on a toxic substances control bill from the time he came to the Senate and finally got it passed just before he left here.

That bill specifically directed EPA to regulate the manufacture, use and disposal of PCBs. Polychlorinated biphenyls was the only chemical substance specifically named in the Toxic Substances Control Act, because Congress believed the chemical and toxicological properties of the compound, as well as its widespread use, posed significant risk to public health and the environment.

In 1978, the act banned manufacture, processing or distribution and commerce or use of PCBs except in totally enclosed systems.

Bear this in mind, Mr. Chairman. The year was 1978 that the ban on manufacture, processing or distribution was put into effect. Regulations issued pursuant to the passage of the Toxic Substances Control Act required the disposal of PCBs at regulated landfills or incinerators.

Pipelines discontinued the use and disposed the PCB-laden lubricating oils used at compressor stations in the mid-1970s. However, residue contaminated with PCBs remained undetected in the nooks and crannies of the system.

In 1981, PCB contamination was discovered in a natural gas pipeline in Long Island, New York. EPA initiated an investigation to determine and remedy the source of PCBs in the interstate pipeline systems. After completing an in-depth survey of 31 interstate pipelines, EPA identified 12 pipeline companies with significant levels of PCBs present in their systems.

So in 1981, EPA instituted a program with the 12 natural gas pipeline companies to monitor and drain PCBs from their pipelines. Texas Eastern was but one of the 12 pipelines.

At this point it is unclear whether EPA explicitly instructed the pipeline companies on the proper, legal disposal of the PCB-contaminated liquids. It is also uncertain whether EPA requested disposal information from the pipelines during the monitoring period.

While the current EPA investigation is focused on Texas Eastern's dump sites, EPA has promised to conduct a full investigation of the disposal methods used by the other 11 pipelines identified as having PCB contamination in 1982.

Mr. Chairman, this hearing presents the first formal opportunity for Congress to ask the multitude of questions raised by Texas Eastern's PCB-contamination fiasco. Several questions stand out most prominently in my mind.

First, when did EPA become aware of Texas Eastern's practice of dumping PCBs into pits at its compressor stations? Why were not the EPA regional offices, State pollution control officials and the

public immediately notified of the potential for public exposure to PCBs at these sites?

I was shocked to learn that the director of the Arkansas Department of Pollution Control and Ecology was not notified of the situation until two days after the story broke in The Washington Post.

Secondly, during its 1981 discussions with natural gas pipeline companies, did EPA provide specific guidance to the companies for the proper, lawful disposal of the PCB-contaminated liquids removed from the systems? And if guidance was given, were any followup investigations conducted to ensure that proper disposal of the PCBs was occurring?

Thirdly, were the pipeline company employees of these compressor stations informed of the risk associated with occupational exposure to PCBs?

Mr. Chairman, the issues addressed here today are of utmost importance to the people living and working along these natural gas pipeline routes. Preliminary soil and water samples taken during EPA's ongoing investigation have identified five sites—one each in New Jersey, Kentucky and Tennessee and two in Mississippi—that may pose an immediate threat of human exposure to PCB.

In my home State of Arkansas, surface soil samples taken from a drainage area near a Texas Eastern compressor station located near Bodcaw in Nevada County have shown PCB levels well above the point at which the Environmental Protection Agency normally requires a cleanup.

Unfortunately, investigations conducted at the various sites along the pipeline have uncovered not only the presence of PCBs but a variety of other hazardous and toxic substances as well. It is alarming to learn that the situation could be more serious and complex than first imagined.

I have received many calls and letters from people living and working near the Texas Eastern pipeline and along other natural gas pipeline routes. All of these citizens ask the same questions. They want to know why these pipelines were allowed to dump PCBs into pits near their homes and water wells. They want to know why EPA was not at work protecting them. And, most desperately, they want to know if their health and their lives are in danger.

Our people deserve the most direct and honest answers we can possibly provide.

Now, Mr. Chairman, why other lines which had used the same chemicals carefully disposed of their residues and 12 did not is a really good question for you to pose to the EPA. Obviously, some form of rules and regulations were in effect about disposal of PCBs. Otherwise, why would the other pipelines have disposed of theirs very carefully, and 12 pipelines did not?

Mr. Chairman, I ask unanimous consent that an article from the Arkansas Gazette dated March 14, 1987, and an article dated this morning, March 17, from the New York Times be inserted in the record following my statement.

Again, let me express my appreciation to you for holding this hearing and for allowing me to pose these questions. It is normal protocol to say I would be happy to answer any questions you may have, but I do not have any answers to these questions. I am pre-

senting the questions, and I know that this committee will do its very utmost to find the answers.

Senator LAUTENBERG. Thank you, Senator Bumpers. Your request for record insertion, without any objection being heard, will be honored. We are pleased to have you join us, if you would like, and come to the table. Otherwise, we invite you to submit questions which the subcommittee will forward and get some of the answers for the concerns you raised. I would have expected nothing less than the clear, lucid presentation that you gave.

Senator BUMPERS. Thank you very much, Mr. Chairman.

Senator LAUTENBERG. I ask my colleague, Senator Pressler, do you have any questions for Senator Bumpers?

Senator PRESSLER. No, I do not have any.

Senator BUMPERS. I am pleased, because, as I said, I do not have any answers to these questions. But I can tell you that the people in my state have a deep and abiding interest in these hearings and the answers to the questions that you are going to be pursuing.

Senator LAUTENBERG. This is a national problem, and the people in Arkansas as well as the people in New Jersey are entitled to answers.

Senator BUMPERS. Mr. Chairman, there is one other thing, which I think you pointed out in your opening statement. The Times article this morning reported on the site in New Jersey and indicated that maybe the first study was wrong and the second study indicated there was no contamination. I know that you will pursue that. It seems to me that when you have conflicting reports like that, that is certainly grounds for additional studies.

Senator LAUTENBERG. Indeed. Thank you very much, Senator Bumpers.

[The articles referred to by Senator Bumpers follow:]

[From the New York Times, Mar. 17, 1987]

DATA SHOW E.P.A. DELAYED WARNING ABOUT PCB PERIL

(By Philip Shabecoff)

WASHINGTON.—The Environmental Protection Agency knew about PCB contamination at specific sites along the Texas Eastern pipeline as early as the autumn of 1985 but took no immediate action to protect public health at the sites, according to internal agency documents.

Agency officials had said that they were unable to act more quickly to deal with the contamination because they had insufficient information from the company.

But E.P.A. officials interviewed over the weekend conceded that, in retrospect, it appeared that the agency should have moved faster to protect the public from the contamination and at the very least to have notified the state and local governments of the potential dangers.

MEMO ABOUT ENFORCEMENT

The documents also show that the head of the agency's toxic substances program, Assistant Administrator John A. Moore, believed that the pipeline company might have "knowingly and willfully" violated the Toxic Substances Control Act. In a memorandum that he wrote on June 30, 1986, to Richard H. Mays, the agency's acting head of enforcement, Dr. Moore asked that the issue be reviewed for a possible criminal investigation.

Agency enforcement officials are now taking civil administrative action against Texas Eastern Gas Pipeline, which acknowledged burying PCB's, polychlorinated biphenyls, at 51 sites along its right of way. But agency officials have said they were not considering criminal charges against the company because there was no evidence that it had willfully violated the law.

Several agency officials said that they had not ruled out a criminal investigation of Texas Eastern and that such an investigation remained a distinct possibility.

A spokesman for Texas Eastern, Fred Wichlep, said that the company had not moved quickly to deal with the contaminated waste sites because "we were convinced they did not pose a health problem." He maintained that there still was no conclusive evidence of any health threat.

Christopher Daggett, the E.P.A. regional director in New York, said that the recent laboratory tests that found PCB's in drinking water wells in West Amwell, N.J., were flawed and that the wells might not be contaminated. The E.P.A. and the state are taking new tests to find out if there are, in fact, PCB's in the water. He suggested that residents continue to use bottled water until the new results come in.

Mr. Wichlep also said that the company had not knowingly or willfully violated the toxic substances law.

The manufacture of PCB's was banned by the 1976 toxic substances law after the chemical was found to be a cause of cancer and other diseases. Under the law the toxic chemical was required to be disposed of by incineration at government-approved disposal sites.

But the agency documents, obtained from staff aides of the Senate Superfund and Environmental Oversight Committee, indicated that the company continued to dispose of contaminated wastes in eastern pits along its pipeline through 1984. The subcommittee is holding hearings on the pipeline PCB contamination issue starting on Tuesday.

Senator Frank R. Lautenberg, Democrat of New Jersey, chairman of the subcommittee, said today that the documents showed that "E.P.A. sat on its hands for 18 months even after knowing about the PCB-laden pits."

LAUTENBERG ASSAILS AGENCY

Senator Lautenberg also took the agency to task for failing for 15 months after it had found out about the PCB's at the specific sites to inform the states involved and the citizens who were potentially endangered by the toxic chemical.

He said one of the sites pinpointed in a memorandum Nov. 19, 1985, from the company to the environmental agency was in West Amwell, N.J., where the agency last week found unsafe levels of PCB's in nearby drinking-water wells.

Senator Lautenberg said that the agency's inaction was "intolerable."

One of the documents was a letter to the agency's toxic substance monitoring office from F.L. Cohagan, senior vice president of the Texas Eastern Gas Pipeline Company, discussing the company's PCB disposal practices. Attachments to the letters gave specific details about the location, size and status of the disposal sites and information about the concentrations of PCB's.

Some of the sites were described as having zero concentrations of PCB's. Others, like the West Amwell site near Lambertville, N.J., were listed as having an "unknown" concentration of the substance. Still others listed concentrations at specific sites, such as one in St. Francisville, La., where concentrations in the soil were said to be 4,279 parts per million.

The Federal agency regards concentrations above 50 parts per million in soil as excessive. But it took no direct measures to counteract the contamination until this February.

Gus Conroy, the agency's director of compliance for pesticides and toxic substances, said that the company "told us they had hired a contractor and were looking into it," adding, "We wanted more information; that's why we waited." He also said that while the toxic substances law was a federally enforced statute, "we had a responsibility to inform the states about this."

But he added that the company "was not forthcoming enough in providing information," saying, "In hindsight we should have acted."

Frederick Stiehl, the agency's associate enforcement counsel, said that "as we look back at it in retrospect, it certainly looks as if we could and should have acted faster."

The reason the agency did not begin criminal action against Texas Eastern despite the recommendation of Mr. Moore was that there was insufficient information on which to build a case to take to the Justice Department, according to Thomas L. Adams Jr., head of enforcement for E.P.A.

"There are a lot of gaps in our information" said Thomas P. Gallagher, director of the agency's enforcement investigation center. He explained that a lot depended on what the company knew about what it was disposing in the earthen pits and whether or not it deliberately broke the law.

"There is a big difference between slobs and crooks," he said. "I don't think there is any question about where the company is on the first characteristic. The question is where they are on the second."

The environmental agency has also announced plans to look at the PCB disposal practices of 11 other interstate gas pipelines.

[From the Arkansas Gazette, Mar. 14, 1987]

PCBs AT NEVADA COUNTY SITE EXCEED EPA LIMIT, TESTS SHOW

Soil tests from a Texas Eastern Gas Pipeline Company compressor station in a remote area northwest of Bodcaw (Nevada County) have shown levels of cancer-causing polychlorinated biphenyls well above the point at which the federal Environmental Protection Agency normally requires a cleanup.

Surface soil samples in a drainage area near the compressor station at Bodcaw showed a PCB level of 294 parts per million. Another sample taken at a depth of three feet from a disposal pit showed a PCB level of 290 parts per million.

According to the state Pollution Control and Ecology Department, the concentrations of PCBs at the Bodcaw site "are well above what is considered under federal hazardous waste regulations the 'action level' of 50 parts per million in soils."

In earlier tests done by a Texas Eastern consultant, PCBs were shown to be at 16,500 parts per million at one location at the Bodcaw site.

Soil tests taken by the PC and E at four other Texas Eastern stations found only low levels of PCBs at Bald Knob and Donaldson (Hot Spring County) and no detectable PCBs at sites on the Lawrence-Craighead County line near Egypt (Craighead County) and in Clay County just south of the Missouri border. PC and E officials said there was no evidence that Texas Eastern ever used a disposal site at the Clay County compressor station.

SAYS OFFICIALS SURPRISED

Dr. Bob Blanz, PC and E Deputy director, said Friday that Texas Eastern officials had expressed surprise that the readings were so high at the Bodcaw site when compared to others in the state and that they had no explanation for the difference.

Dr. Blanz said that Texas Eastern earlier had submitted a plan to EPA for cleaning up the sites along the transmission line and that the Arkansas sites were scheduled early in the effort.

The testing in Arkansas began after the *The Washington Post* reported that Texas Eastern had dumped PCB-laden liquids into pits near compressor stations along the company's major gas transmission line running from Texas to New Jersey.

After the company stopped using the pits, they were back-filled. The company ceased using the pits in Arkansas from 1975 through 1984.

WATER TO BE TESTED

State Health Department personnel and representatives of a laboratory under contract to Texas Eastern will be collecting water samples from wells and water lines near compressor stations at Bald Knob, Egypt, Donaldson and Bodcaw.

There are about 15 private wells near the four compressor stations, according to the PC and E.

The water sampling is expected to be completed by Thursday and results should be available by about March 26, Texas Eastern officials said.

Richard Merritt, a spokesman for PC and E, said Texas Eastern also had agreed to several "interim measures," including establishing monitoring wells at the sites.

According to a news release from the EPA, five sites along the Texas Eastern gas transmission line—two in Mississippi and one each in New Jersey, Tennessee and Kentucky—have been singled out for "further assessment" because of the level of PCBs found at the site and also because large numbers of private water wells are near the stations.

Senator LAUTENBERG. I would now like to call the first panel of witnesses to the table: Mr. Homeyer, the president of Texas Eastern Gas Pipeline; Mr. Church, senior vice president; and Mr. Horton, vice president.

It is standard practice in oversight hearings that the subcommittee swears in all witnesses prior to their testimony. That oath ap-

plies to all testimony presented, whether oral or written, including responses to written questions submitted following the hearing.

We have a lot to cover, and I would ask the witnesses, because of the importance of time and the importance of getting to all of the panels today, to see if you can summarize your written statements within five minutes. This light will signal when your time is up. If you need a minute or two more, I would certainly want you to take it.

After hearing your statement, the subcommittee will proceed to questions. Each member will have five minutes per round. The record for this hearing will remain open for two weeks.

I will now supply the oath for you to respond to, and that includes all members of the panel. I ask: Do you swear that the testimony that you will give to this committee is the truth, the whole truth, and nothing but the truth, so help you God?

The panel, en masse. I do.

Senator LAUTENBERG. Welcome, Mr. Homeyer and your colleagues from Texas Eastern Gas. We had a chance to meet in New Jersey. I know that this is a matter of great concern to you. I welcome the opportunity to hear your testimony and to have you respond to questions that I and my colleagues will put to you. I know that your company will endeavor to respond as forthrightly as they can. I think that has been the case.

But questions have been raised, questions of great concern to the community, to this panel, and we want to get answers to them. I am certain that you will be forthright in your responses. It is important that we get to the bottom of this, as Senator Bumpers said.

It is not just Texas Eastern we are talking about. We are talking about a process that apparently is nationwide.

We welcome the comments of you and your colleagues, and we ask you to proceed.

STATEMENT OF HOWARD HOMEYER, PRESIDENT, TEXAS EASTERN GAS PIPELINE CO., ACCOMPANIED BY H. DOUGLAS CHURCH, SENIOR VICE PRESIDENT, ENGINEERING AND OPERATIONS, AND STEVE HORTON, VICE PRESIDENT, TECHNICAL SERVICES

Mr. HOMEYER. Good morning. My name is Howard Homeyer, and I am the president of Texas Eastern Gas Pipeline Company. I have been employed by Texas Eastern for over 20 years and have served in a variety of positions. In 1983, I was appointed executive vice president of the gas pipeline company and assumed my present position in May 1985.

Appearing with me today as part of the Texas Eastern panel are Doug Church, on my right, who is senior vice president in charge of engineering and operations for Texas Eastern Gas Pipeline, and on my left is Steve Horton, who is vice president in charge of technical services for Texas Eastern Gas Pipeline Company.

We have prepared testimony for inclusion in the record, which includes 13 appendices¹ that are of this magnitude (indicating), and each of us will make a few brief remarks here this morning.

¹ The appendices referred to have been retained in committee files.

Texas Eastern Gas Pipeline Company is a division of Texas Eastern Transmission Corporation and is engaged in the transportation and sale of natural gas primarily to the northeast area of the United States.

Texas Eastern Gas Pipeline Company operates a pipeline network of almost 10,000 miles, extending from the Texas-Mexico border to the New York City area. Texas Eastern's facilities are located in 16 states in the eastern part of the country. Some 74 compressor stations are situated along the system to push the gas through the pipeline from the supply areas, primarily in Texas and Louisiana, to the market area in the northeast.

The company employs about 1,800 employees at various locations throughout its system. We serve approximately 90 local gas distribution companies which supply natural gas to approximately 15 million homes and businesses in this market area.

Within a week of the initial report in the press of the presence of polychlorinated biphenyls, PCBs, at some of Texas Eastern's compressor stations, Chairman Lautenberg joined me in a visit to our compressor station at Lambertville, New Jersey.

Mr. Chairman, we appreciate your taking the time from your schedule and visiting this facility to gain firsthand experience and knowledge of the equipment used in the layout of a compressor station. Perhaps your tour at this facility will help you better visualize some of the material that is included in our testimony.

We hope that this hearing which you have convened here today will serve as a forum for the Congress, other elected officials and government agencies at all levels to pool information and expertise and to promote a beneficial working relationship among the interested parties.

Texas Eastern is committed to the removal of PCBs from the company's natural gas pipeline system. Over the past ten years, Texas Eastern has spent in excess of \$20 million to address its PCB problems. Beginning in 1972, Texas Eastern implemented a program to remove PCB lubricating oil from 24 of its turbinemen/compressors. It later implemented an EPA-approved plan to reduce residual PCB contamination in these turbine/compressors. It then implemented an EPA-approved program to remove PCB-contaminated liquids discovered in its pipeline system. And now, at the present time, we are focusing on the presence of PCBs at its compressor station sites.

Mr. Chairman and members of this committee, let me assure you that Texas Eastern will continue to take whatever steps are necessary to deal with this pervasive problem. Texas Eastern has repeatedly stated its commitment to cooperate with the EPA, the various states and all other affected parties in order to achieve a satisfactory resolution of this difficult matter.

We have proposed to EPA that we develop site-specific cleanup plans for each of the compressor station sites that require cleanup. We have proposed to excavate, sample, analyze and remove PCB-contaminated soil until the PCB concentration is reduced to an acceptable cleanup level. All removed soil will be transported to an authorized disposal facility, unless an alternative treatment or disposal method is shown to be feasible and is approved by the appropriate regulatory agencies.

Cleanup will be most effective if conducted on a uniform and consistent basis. This approach will require cooperation among EPA headquarters, the six EPA regions involved and the affected states in order to avoid delays in initiating remediation efforts.

We appreciate your invitation to appear here today. The positive problem-solving approach demonstrated by this committee is encouraging. We hope that the interest and involvement of this committee on this issue will promote the further cooperation among the affected states, the EPA regions and EPA headquarters. It is necessary in order for Texas Eastern to proceed expeditiously with the proposed remediation program.

Now Mr. Church will provide some of the historical information about this issue.

Mr. CHURCH. Thank you, Howard.

Mr. Chairman, members of the committee, for the record my name is Holland Douglas Church. I have been employed by Texas Eastern since 1961. During that time, I have served in various positions including project engineer, field operations supervisor, general manager of construction, and vice president and chief engineer for gas engineering.

I have held my current position of senior vice president, engineering and operations, since October 1985. My duties include planning, new construction and all phases of operation for the gas transmission lines, including the compressor stations.

Texas Eastern operates two pipeline systems: the War Emergency Pipeline, a 24-inch line known as the Big Inch which was constructed during World War II and which was converted from liquid to gas in 1947 after the line was acquired by Texas Eastern; and the 30-inch mainline system which was constructed in the 1950s.

Powered by large reciprocating engines, turbines and electric motors, these stations compress the gas to enhance its movement through the lines as it travels north and east from the points at which the gas enters the lines in Texas and Louisiana.

Mr. Chairman, since you have visited our Lambertville station, you have a clear picture of a station site layout.

In 1958, Texas Eastern began using PCB lubricating oil in its turbine/compressors to reduce the risk of fire. By 1970, Texas Eastern was using PCB lubricants in 24 pipeline turbine/compressors at 19 pipeline compressor stations located in nine states along Texas Eastern's pipeline.

As a result of the manufacturer's notice that PCBs tend to persist in the environment and that tolerance limits were being established for PCBs in various food products, in early 1972 Texas Eastern began to phase out the use of PCB lubricants in its turbine/compressors.

Since that time, Texas Eastern has undergone tremendous effort and expense to rid its lines of PCBs. We believe that this extensive program, which we are here to discuss with you today, of cleaning up PCBs at the station sites will be a major step toward bringing to a successful conclusion this long, difficult and often frustrating work.

With this very abbreviated background, let me turn to the issue of the pits. The earthen pits have been common in the production and handling of hydrocarbons since the inception of the oil and gas

industry. Many of the pits at our stations were constructed and then taken out of service years ago.

According to our information, the pits at Lambertville, for example, were closed no later than 1972.

Pits were used in the pipeline industry because the liquids collected in the pipeline system are discharged from that system at high pressures that cannot safely or easily be contained in an ordinary tank or other container. The liquids in the open pits evaporated or were burned.

As described in our prepared testimony, Texas Eastern developed a design for and installed a diffuser tank that could safely capture liquids and replace the earthen pits.

In 1981, when PCBs were discovered in the pipeline liquids, Texas Eastern had installed diffuser tanks at 13 of its pipeline compressor sites. But earthen pits were still in service at the remaining compressor station sites.

By 1984, an additional 32 diffuser tanks had been installed, and diffuser tanks were in place at all affected Texas Eastern Pipeline compressor station sites. As the diffuser tanks were installed at each compressor station site, the pits were no longer required and they were taken out of service. Until the tanks were in service, there was not an alternative to bleed off the liquids under high pressure.

In January 1985, Texas Eastern began to systematically gather information regarding the use of earthen pits on its system. The information gathered in this inquiry provided the basis for a response by Texas Eastern to requests for information by EPA later in 1985 and 1986.

In August 1985, Texas Eastern representatives met with EPA headquarters and discussed the possible PCB contamination of earthen pits, which the diffuser tanks had replaced at our compressor stations. Since that time, as explained in our prepared testimony, Texas Eastern has worked with its consultants to assess the presence of PCBs and to propose the generic cleanup to EPA.

I appreciate the opportunity to appear here today, and I would now like to introduce Steve Horton, who is our vice president of technical services. Steve has a few words he would like to say.

Mr. HORTON. Thank you, Doug.

Good morning, Mr. Chairman, Senators. My name is Steven L. Horton. I have been with Texas Eastern since 1975. As vice president of technical services, I am responsible for the supervision of the environmental protection department. In the past few weeks, I have met personally with many state officials and some Congressmen and participated in a number of local and town meetings.

Texas Eastern's compressor stations are generally located in remote areas. Each former pit site along our system, which has been evaluated by Weston, is completely fenced. As is explained in the Weston reports appended to this testimony, PCBs bind tightly to soil particles and are virtually insoluble in water. At compressor station sites where potential for offsite migration has been identified, we have erected silt fences to control offsite migration of PCB-containing sediments.

The recent publicity associated with this problem has created concern in the affected states and with their residents. We have in-

tensely focused our resources on responding to those concerns. In public meetings and in meetings with officials in those states through which our system passes, Texas Eastern has reaffirmed its commitment to remediate and manage these sites, consistent with the protection of public health and the environment.

Texas Eastern has provided state officials with copies of the Weston reports and maps which identify the locations of the compressor station sites. Within the first week after initial publicity, we had met with officials from Louisiana, Pennsylvania, New Jersey and Arkansas. The following week we met with representatives of Mississippi and Kentucky and again with representatives of Arkansas and New Jersey.

Since then, we have met with representatives of each state, upon request, and have participated in a number of local town meetings. Additionally, at compressor station sites we have accommodated numerous visits by federal and state inspection teams.

Texas Eastern cares about the communities where our employees and their families live and work. We are dedicated to being a good and responsible corporate citizen.

I thank you for the opportunity to appear today on behalf of Texas Eastern.

Senator LAUTENBERG. Thank you all very much for your testimony.

We will now go to questions, as I indicated.

I am troubled by something that is missing from the testimony. I would describe it as a sense of duty, a sense of obligation, to inform the public generally, State and local officials. I spent the last couple of years drafting provisions of the new Superfund law, and as a consequence of that I have more than a casual interest in this issue of notification.

Your testimony on page 28, Mr. Homeyer, suggests a notion of this duty. I am not sure whether I read it correctly, but you indicate, or seem to think, that this duty only begins after the newspapers break a story. Then and only then do you seem to feel obligated to tell the officials and the public what they have already read on the front page.

That definition of public duty is different than the way I see it, particularly if you are from West Amwell, New Jersey and you have been on the edge of this emotional roller coaster which these folks have been on.

You were dumping pipeline liquids in pits. You knew in the early 1970s, indicated by your testimony, the risks associated with PCBs. You knew in 1981, 6 years ago, the pipeline liquids contained the PCBs. But you did not notify the public or the State or local officials about the pits in 1981. Am I correct on that?

Mr. HOMEYER. There was no notification made is my understanding. We had been working with EPA since 1981 when it was first discovered that the pipeline liquids perhaps did contain PCBs, and we accelerated a program to install the necessary equipment to capture the pipeline liquids from the pipeline and properly dispose of them.

We continued to work with EPA, as set forth in the testimony here, providing them information about the locations of the pits and working toward the development of a plan to remediate that

situation. We worked with EPA at the national level because of a number of states involved, the 12, as well as the half dozen EPA regions involved.

Senator LAUTENBERG. I understand why you did it the way you did. I guess where we come out, to kind of summarize your answer, is that for whatever reasons, you did not feel compelled to notify local officials until a much later date. You did not go to the public before that time. Am I correct?

Mr. HOMEYER. That is correct. We also believed that there was no health threat involved because of the characteristics of PCBs: they bind tightly to the soil; they are insoluble in water. The pits were located on company property within fences. And we also did not have the results of the Weston study that specifically identified the location and the extent of the PCB contamination of the pits until December of 1986.

Senator LAUTENBERG. You had a report in December of 1986 showing soil samples with 4,600 parts per million in West Amwell and elsewhere. But that information was not then shared with the State or public officials. Am I correct again?

Mr. HOMEYER. That was shared with the EPA. That material was made available to the EPA through our working relationship, and a meeting was held to discuss the results of that, the preliminary Weston report at that time.

Senator LAUTENBERG. So EPA was the repository for the information, as you gave it.

Mr. HOMEYER. That is correct.

Senator LAUTENBERG. I was curious about how long you continued to dump the PCB liquid in the pits. Your testimony indicates that you dumped until diffuser tanks for the PCBs could be installed. It indicates that you did not finish, installing those diffuser tanks until—I am not sure, Mr. Church is that 1984 throughout the system?

Mr. CHURCH. Yes, sir, that is correct.

Senator LAUTENBERG. Does that mean, then, that the pits were used until 1984 in some locations?

Mr. CHURCH. Yes, sir, that is correct. When we found out the condensates did contain PCBs, we started a program of installing filter/separators. Our highest priority at that time was to make sure that these condensates with PCBs did not get to our customers.

In 1982, we began a program of installing filter/separators on our system to ensure that we caught the liquids and contained them on the Texas Eastern system. We also started an extensive program at the same time of cleaning the pipelines with pigging devices to get all the liquids that we could out of the lines. We installed a dehydration facility in Louisiana to keep the liquids out of the pipeline. And we took several steps. Of course, we continued with our program of diffuser collectors to catch the liquid just as soon as we possibly could.

Senator LAUTENBERG. Thank you. I will now turn to Senator Warner.

Senator WARNER. Thank you, Mr. Chairman.

As we look at this situation now in 1987, I think one can say there was some footdragging following the discovery of the problem

and the measures taken to address the problem. What were the controlling features of the schedule on which you operated? Was it a technical problem? In other words, you did not have the state-of-the-art knowledge as to how to deal with it? Was it a cash flow problem within the company, namely insufficient cash to apply to the problem? Or was it State or local or Federal regulations which were not clear at this time?

Mr. CHURCH. Senator, I think a review of the records, which we are doing right now—we have not had a lot of time in the last month to really properly review the records. But I think we are going to find that most of the pits were out of service before 1984. There were only a few remaining in service up in 1984.

When the company discovered this problem, I think we used the resources that were available. We expedited the filter/separators which would protect our customers. We had to come up with a design for our diffuser system. We had that design in place, and we proceeded to install these tanks.

I guess our greatest concern was getting the free liquids out of the lines and keeping them from going to the customers.

Senator WARNER. So it is your judgment that you took the steps in a timely fashion and you were not short on cash and you knew what to do.

Mr. HOMEYER. It was not a cash constraint. As I mentioned earlier, the company has spent over \$20 million to address this issue over the last 10 years, and cash constraints were not an issue.

Senator WARNER. When a problem like this arises, the Environmental Protection Agency will step in and try to help you to work it out. How do you regard the steps that they provided you, the guidance, the technical expertise? Was it a working partnership? Do you feel they helped?

Mr. CHURCH. I think they worked with us. We had an exchange of letters between Texas Eastern and EPA that established sampling programs for the liquids. We tried to work together. We felt that they were knowledgeable about the pipeline industry and how our system worked.

Senator WARNER. Were they timely in their response? In other words, did they return your calls?

Mr. CHURCH. I think, generally speaking, they were. I think in the later years, in maybe 1985 and 1986, maybe some of the responses could have been a little more timely. That is my personal knowledge.

Senator WARNER. Did they have timely on-site inspections with you?

Mr. CHURCH. I'm sorry, sir. I really do not know the answer to that. I really do not know.

Senator WARNER. Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you, Senator Warner.

Senator Breaux?

Senator BREAU. Thank you very much, gentlemen, for being here and for helping us find out the extent of the problem. I have some dates with blanks, and I would like you to fill in the blanks for me.

As I understand it, Texas Eastern started using PCB lubricating oil back in 1958 and started phasing it out in 1972 because some-

body at Monsanto told the company that PCBs are bad stuff, stop using it. You testified that you completed the process of switching to a non-PCB lubricating oil in 1977.

So if you found out about it in 1972 and you did not stop using it until 1977, what about that five-year period? Did you have a lot of PCBs in stock that you wanted to continue to use and put into the system? If you found out about it in 1972, why use it until 1977?

Mr. CHURCH. It was in a contained system, what we felt was a contained system, in our turbines and our compressors. And we really did not know the extent of PCBs. We thought we were doing the prudent thing. When the lubricants were taken out of the units, it was properly stored and properly handled. And we believed, since it was an enclosed system, that we were doing what we should have done with them.

Senator BREAU. You still continued putting them into the system for five years after Monsanto said, look, this is bad stuff.

Mr. CHURCH. We were actually phasing it out during this period.

Senator BREAU. While you were phasing it out, you continued to put it into the system. You still continued to use it for 5 years after somebody at Monsanto said this is bad material; you have really got some problems with this stuff.

Mr. CHURCH. We continued to use it in the turbine/compressors. But as I said earlier, it was in an enclosed system and we felt that was a safe use.

Senator BREAU. I have a copy of a letter from your company to EPA in 1985, which says the last time Texas Eastern initiated the use of PCB lubricating oil in one of its facilities was in Huntsville, Texas in 1970.

Mr. CHURCH. Yes, sir.

Senator BREAU. But you were still using it in 1977. The letter, gives the impression that you are not using PCBs after 1970; yet you are clearly using it up until 1977, 7 years later.

Mr. CHURCH. We were phasing it out during this period. As you said earlier, we did have some of the oil in stock, and we were using that material up until 1977. By that time, it was completely phased out.

Senator BREAU. I know, but it is 7 years. What was the company doing during that period to find something else to use or some place to put the stuff, other than continuing to put it into the system, when you knew it was really bad material of the highest degree?

Mr. CHURCH. Senator, I do not think our people really knew or that Monsanto's indication was that strong that it was bad material. I do not think our company had any knowledge about PCB, that kind of knowledge about it.

Senator BREAU. Let me ask you some questions about some of the letters and the material that you provided the committee, which is voluminous, and we thank you for that. You got a letter in 1981, the beginning of 1981, to the company from EPA, the subject of which is the condensate problems in the Chicago area.

The letter from EPA tells your company that what they are finding brings the issue under the stringent handling and disposing requirements of TSCA. They say: if any of the condensate in oil that collects in or is cleaned from your gas transmission system con-

tains greater than 50 parts per million of PCBs, your company is required by law to follow the strict procedures in storing, labeling, and disposing of the material and in keeping records on its disposition.

But after Texas Eastern gets that letter clearly warning about the ways it should be handled and disposed of, I take it that Texas Eastern after that date continued to blow it out in open earthen pits. Was that following any EPA directive or any EPA acquiescence or any EPA negligence in not telling you how you should dispose of it? Or did you have a contractor that would read that letter and say TSCA allows us to blow it in earthen pits after 1981?

For instance, the St. Francisville pit in Louisiana, the largest pit in the system, 255,000 cubic feet, you were still putting PCBs in that pit until 1983. What authority allowed you to do that?

Mr. CHURCH. I think in 1981 and 1982, with the exchange of letters on handling of condensates, Texas Eastern started a program of disposing of the condensates, manifesting and having the condensates incinerated. We have records in our files showing when we started that program. We also provided that information to EPA.

Senator BREAU. So you are telling us that you get the letter in 1981 that says to dispose of it according to TSCA rules and regulations. Your company continues to blow it in the pits. The pit in Louisiana has 3,600 parts per million PCBs; a safe level is 50.

Did EPA not check that you were still doing that? Is it their fault? Or is it the company's fault? I am just trying to find out how we were able to continue to dispose of PCBs in earthen pits after 1981.

Mr. CHURCH. As I said earlier, I think the records are going to show, when they are properly reviewed, that our use of earthen pits was down to a few.

Senator BREAU. One is too many.

Mr. CHURCH. Yes, sir.

Senator BREAU. It does not help to say, well, we are only using a few; we are phasing it out. We are talking about a three-year period after the time that you get a letter saying this is bad stuff, dispose of it only according to TSCA rules and regulations, and the company is still blowing it into open pits.

Maybe EPA said that was okay, in which case EPA has got some real serious problems. Or maybe somebody at Texas Eastern did not read the letter. Or did you have a contractor doing this for you that just screwed up?

Mr. CHURCH. I think our employees that were handling the letter exchange and working with the Consent Agreement believed that the pits were somehow covered in the agreement that we had with EPA, although the pits were not specifically spelled out.

Senator BREAU. Do we have a copy of that agreement? Could we see the agreement? It is a critical point.

Mr. CHURCH. The exchange of letters that occurred at that period, sir?

Senator BREAU. You spoke of an agreement. I was wondering if there was an agreement that allowed the disposal of PCBs in 1983 in Louisiana or anywhere else into earthen pits.

Mr. CHURCH. If I misspoke there, let me retract and repeat what I said. What I believe that our employees believed that were handling these matters was that, although it was not written anywhere, the pits were part or at least considered under the Consent Agreement. I believe our employees actually felt that way, that the pits had been there for many years, we had been using them, they were a part of the pipeline system, they were connected to the system.

And I believe our employees, although it is not written in the agreement, believed that the earthen pits were a part of the agreement or understanding that we had—let me rephrase that—that EPA was at least knowledgeable about the fact that we were using earthen pits.

Senator BREAU. My time is up. Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you, Senator Breau.

So if I heard you correctly, Mr. Church, did you tell EPA that you continued to dump into these pits, that you continued to use them during that period of time?

Mr. CHURCH. No, sir. I do not believe I personally did.

Senator LAUTENBERG. Did the company?

Mr. CHURCH. I cannot find any of the documents, other than in 1981 or 1982 there is a letter in this exchange of letters about handling liquids on the Transwestern system. There is a reference to the discharging of liquids into a scrubber pit at Station 8 at Corona, New Mexico in the Transwestern system. There is a definite reference in that letter to discharging liquids into a scrubber pit.

Senator LAUTENBERG. This letter is to whom from whom?

Mr. CHURCH. This is a letter dated January 21, 1982 from F. L. Cohagan to Mr. John S. Seitz. The title of this page is Transwestern Pipeline Company PCB Remedial Monitoring Program. It is the program that is laid out that says: Location Section. This is talking about where they are going to sample the liquids. It lists various compressor station sites, and the sampling point is a scrubber pit.

Senator LAUTENBERG. Could we have a copy of that letter for the record? I do not think we have it.

[The letter referred to follows:]

TEXAS
EASTERN
Gas Pipeline Company

A DIVISION OF TEXAS EASTERN TRANSMISSION CORPORATION

F. L. COHAGAN
 VICE PRESIDENT

January 21, 1982

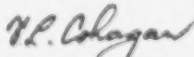
Mr. John S. Seitz (En-342)
 Environmental Protection Agency
 401 M Street S.W.
 Washington, D.C. 20460

Dear Mr. Seitz:

A monitoring plan for PCB contamination has been developed for the Texas Eastern Gas Pipeline Company and Transwestern Pipeline Company systems in accordance with Mr. A. E. Conroy II's letter dated December 7, 1981. In accordance with Item VI of Mr. Conroy's letter, attached as our initial report is a copy of the individual plans. For reference purposes, the numbering sequence of the plans follow the format and correspond to those contained in Mr. Conroy's letter.

Please advise should you have any questions or should any part of the plans not meet with your approval.

Sincerely,


 F. L. Cohagan

FLC:lk

Attachments

bcc: Messrs. B. C. Andrews
 J. E. Earnest
 G. H. Ewing
J. C. Williams

1-22-82

J.C.WILLIAMS DISTRIBUTION:

Messrs. G. W. Comanich
 P. W. Fisher
 T. A. Heron
 A. B. Jarnagin
 D. A. Tefankjian

For your information, a transmittal letter for field distribution of this and related information is being developed.

RECEIVED

JAN 22 1982

T. A. HERON

TEXAS EASTERN GAS PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
 (REFERENCE EPA LETTER OF 12-7-81)

Sheet 1 of 6I. BACKGROUNDII. CONDENSATE SAMPLING

- I. (a) Three locations on the contaminated portion of the system where the largest volume of gas is supplied to distribution companies.

LOCATION SELECTIONS:

<u>MS No.</u>	<u>MS Name</u>
(1) 058	Brooklyn Union Goethals Bridge, NY
(2) 034	PGW-Levick St. Philadelphia, PA
(3) 449	Public Service Central Works, NJ

- (b) One utility sales point in each state supplied by a contaminated portion of your system.

LOCATION SELECTIONS:

<u>State</u>	<u>MS No.</u>	<u>MS Name</u>
(1) Texas	1436	United-Chirino #2
(2) Louisiana	418	Gloster, Miss.*
*(1st sales point down downstream of Louisiana. No sales points in contaminated segment of system in Louisiana.)		
(3) Arkansas	107	Ark-La Gas- Cabot, AR
(4) Missouri	043	Missouri Utilities Dexter, MO
(5) Illinois	1242	Central Illinois Goreville, IL
(6) Indiana	941	Lawrenceburg Gas Lawrenceburg, IN
(7) Ohio	095	MG & O-Caldwell Noble Co., OH
(8) Mississippi	098	Fulton, MS
(9) Alabama	947	North Alabama Gas Distr. Muscle Shoals, AL

TEXAS EASTERN GAS PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
 (REFERENCE EPA LETTER OF 12-7-81)

Sheet 2 of 6

(10)	Tennessee	103	Lebanon, TN
(11)	Kentucky	313	Columbia, KY
(12)	West Virginia	005	Columbia Gas (Mfgs.) Rosby Rock, WV
(13)	Pennsylvania - See Item 1(a) above		
(14)	New Jersey - See Item 1(a) above		
(15)	New York - See Item 1(a) above		

(c) One distribution supply location on a section of system which is not contaminated.

LOCATION SELECTION:

<u>MS No.</u>	<u>MS Name</u>
1221	Mississippi Gas Corp. Reeves, LA

2. Three points on the contaminated portion of the system where gas is supplied to other transmission companies.

LOCATION SELECTIONS:

<u>MS No.</u>	<u>MS Name</u>
(1) 087	Algonquin-Lambertville, NJ
(2) 065	Texas Gas-Lisbon, LA
(3) 004	Consolidated Gas Clarendon, OH

TEXAS EASTERN GAS PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
 (REFERENCE EPA LETTER OF 12-7-81)

Sheet 3 of 6

3. Three condensate collection points within the contaminated portion of the system (excluding sales and interchange points) where large volumes of condensate are normally found.

LOCATION SELECTIONS:

<u>Collection Location</u>	<u>Sampling Point</u>
(1) Danville Compressor Station (KY)	Accumulator Tank
(2) Joaquin Compressor Station (TX)	Accumulator Tank
(3) Norris City Compressor Station (IL)	Accumulator Tank

4. Three locations where gas is purchased from another transmission company.

LOCATION SELECTIONS:

<u>MS No.</u>	<u>MS Name</u>
(1) 215	Texas Gas-Lebanon, OH
(2) 216	United-Longview, TX
(3) 217	United-Kosciusko, MI

5. One Point where gas is received from an underground storage field on the contaminated portion of the system.

LOCATION SELECTION:

Compressor Station No. 21-A, Uniontown, Pennsylvania, where gas is received from the Accident, Maryland, storage field. (Sampling point-drainage from incoming pipeline from storage).

6. (a) One location downstream and upstream of points where new equipment such as filter/separators, scrubbers, drips, etc. are installed as part of remedial effort.

ACTION PROPOSED: Not applicable at this time.

- (b) Condensate sampling before and after other remedial steps such as pigging are carried out.

ACTION PROPOSED: Pipeline samples will be taken before and after pigging performed for PCB cleanup purposes.

TEXAS EASTERN GAS PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
(REFERENCE EPA LETTER OF 12-7-81)

Sheet 4 of 6

III. CONDENSATE REMOVAL

1. Volume of condensate collected from those points chosen for monitoring in Part II above.

ACTION PROPOSED: Accumulate information on condensate collected at the following locations as identified in Part II above.

- | | |
|------------|-------------------------------------|
| a. MS 058 | o. MS 005 |
| b. MS 034 | p. MS 1221 |
| c. MS 449 | q. MS 087 |
| d. MS 1436 | r. MS 065 |
| e. MS 418 | s. MS 004 |
| f. MS 107 | t. Danville Station, KY |
| g. MS 043 | u. Joaquin Station, TX |
| h. MS 1242 | v. Norris City Station (No. 11), IL |
| i. MS 941 | w. MS 215 |
| j. MS 095 | x. MS 216 |
| k. MS 098 | y. MS 217 |
| l. MS 947 | z. Uniontown Station No. 21-A |
| m. MS 103 | (Pipeline from Accident Storage) |
| n. MS 313 | |

2. Total volume of condensate collected from the contaminated portion of the system having a PCB concentration of 50 to 500 PPM.

ACTION PROPOSED: Accumulate quantities of condensate collected from the following segments of the system.

- a. 24" Line No. 11 from Lufkin to Joaquin Station
- b. 36" Line No. 40 from LaRose Station to New Roads
- c. 30" Line No. 14 System from New Roads to Kosciusko Station
- d. 24" Line No. 1 System from Longview Station to Station No. 8 (Fagus, MO)
- e. Condensate collected at Station No. 11 Norris City, Illinois
- f. 24" and 20" WEP System from Station 21-A, Uniontown, PA, to Station 26, Lambertville, NJ
- g. Condensate collected at MS 058 - Brooklyn Union, Goethals Bridge, NY

3. Total volume of condensate collected from the contaminated portion of the system having a PCB concentration of 500 PPM or greater.

ACTION PROPOSED: Accumulate quantities of condensate collected from the following segments of the system.

- a. 24" Line No. 11 from Joaquin Station to Sharon, LA
- b. 16" and 20" Line No. 13 from Joaquin Station to Longview Station
- c. 30" System from Kosciusko Station to Station 21-A, Uniontown, PA
- d. 30" Storage Line No. 9 system from Station 21-A, Uniontown, PA, to Delmont Station
- e. Penn Jersey system from Delmont Station 26, Lambertville, NJ
- f. Mainline system from Station 26, Lambertville, NJ, to New York State

TEXAS EASTERN GAS PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
(REFERENCE EPA LETTER OF 12-7-81)

Sheet 5 of 6IV. GAS STREAM SAMPLING

Gas stream sampling to be conducted in conjunction with condensate samples at the major sales points selected for condensate sampling (Part II, No. 1 above) using the June, 1981 "Method to Measure PCBs in Natural Gas Pipelines," EPA 600/4-81-048 (method section pages A-1 thru A-16). One gas sample to be collected at each of the three points as follows:

- (1) February, 1982
- (2) June, 1982
- (3) September, 1982
- (4) February, 1983

ACTION PROPOSED: One gas sample to be collected in accordance with the above schedule at each of the following three locations:

<u>MS No.</u>	<u>MS Name</u>
(1) 058	Brooklyn Union Goethals Bridge, NY
(2) 034	P.G.W. - Levick Street Philadelphia, PA
(3) 449	Public Service Central Works, NJ

V. QUALITY ASSURANCE - TECHNICAL ASSISTANCE

EPA is to make available two "check" samples of pipeline condensate containing a known quantity of PCBs for analysis by laboratories utilized during this program.

ACTION PROPOSED: Labs to be used are as follows:

(1) Primary Lab

Texas Eastern Analytical Laboratory
Texas Eastern Gas Pipeline Company
P. O. Box 2521
Houston, Texas 77001
Attention: Mr. Douglas Dodds

(2) Alternate Labs

- (a) Southern Petroleum Laboratories, Inc.
8880 Interchange
P. O. Box 20807
Houston, Texas 77054
Attention: Mr. Sammy Russo
- (b) Gollob Analytical Service
47 Industrial Road
Berkeley Heights, New Jersey 07922
Attention: Mr. Mel Givens

TEXAS EASTERN GAS PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
 (REFERENCE EPA LETTER OF 12-7-81)

Sheet 6 of 6

VI. SUBMISSION OF INFORMATION

1. An initial report is required to be submitted to EPA by January 12, 1982, to include:

- (a) List of exact location of sampling sites including type of sampling point (scrubber, drip, etc.) and category under which the point falls in Part II above.

RESPONSE: See information furnished for Part II above. Condensate samples will be collected at meter station facilities, except as otherwise noted.

- (b) A list of condensate collection points for reporting under Part III above if condensate is not removed at the exact location where samples will be collected.

RESPONSE: It is proposed that all condensate collected for reporting under Part III will be collected at the facility location.

- (c) A system map indicating the location of sampling points (Part II) and condensate collection points (Part III).

RESPONSE: See attached system map.

- (d) The name, address, and contact person at each laboratory used.

RESPONSE: Reference Part V above.

2. Monitoring reports to be submitted as follows:

<u>Report Date</u>	<u>For Samples Collected During</u>
January 15, 1982	December, 1981
April 15, 1982	January-March, 1982
July 15, 1982	June, 1982
October 15, 1982	September, 1982
January 15, 1983	October-December, 1982
April 15, 1983	January-March, 1983

ACTION PROPOSED: Because of the timing of the receipt of the EPA letter and the time needed to develop and implement the monitoring plan for a system as large and complex as the Texas Eastern system, it is proposed that sampling will commence with the January-March, 1982 sampling period, reportable April 15, 1982.

1-11-82

TRANSWESTERN PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
(REFERENCE EPA LETTER OF 12-7-81)

I. BACKGROUND

II. CONDENSATE SAMPLING

1. (a) Three locations on the contaminated portion of the system where the largest volume of gas is supplied to distribution companies.

RESPONSE: No gas is supplied directly to a distribution company from the contaminated portion of the system. (Reference Part II Item 2).

- (b) One utility sales point in each state supplied by a contaminated portion of your system.

RESPONSE: No utility sales points are supplied with gas in the states traversed by the contaminated portion of the system.

- (c) One distribution supply location on a section of system which is not contaminated.

LOCATION SELECTION: Cities Service - Canadian sales point, Hemphill County, Texas.

2. Three points on the contaminated portion of the system where gas is supplied to other transmission companies.

LOCATION SELECTION: The only point on the contaminated portion of the system where gas is supplied to another transmission company is to Pacific Lighting Service Company at Needles, Mohave County, Arizona.

3. Three condensate collection points within the contaminated portion of the system (excluding sales and interchange points) where large volumes of condensate are normally found.

LOCATION SELECTIONS:

- | <u>Collection Location</u> | <u>Sampling Point</u> |
|---|-----------------------|
| (1) Compressor Station No. 2
Flagstaff, Arizona | Scrubber Pit |
| (2) Compressor Station No. 5
Thoreau, New Mexico | Scrubber Pit |
| (3) Compressor Station No. 7
Mountainair, New Mexico | Scrubber Pit |

4. Three locations where gas is purchased from another transmission company.

RESPONSE: Gas is not normally purchased from another transmission company anywhere on the contaminated portion of the system.

5. One point where gas is received from an underground storage field on the contaminated portion of the system.

RESPONSE: Gas is not received from an underground storage field anywhere on the contaminated portion of the system.

TRANSWESTERN PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
(REFERENCE EPA LETTER OF 12-4-81)

6. (a) One location downstream and upstream of points where new equipment such as filter/separators, scrubbers, drips, etc. are installed as part of remedial effort.

RESPONSE: Not applicable at this time.

- (b) Condensate sampling before and after other remedial steps such as pigging are carried out.

ACTION PROPOSED: Pipeline samples will be taken before and after pigging performed for PCB cleanup purposes.

III. CONDENSATE REMOVAL

1. Volume of condensate collected from those points chosen for monitoring in Part II above.

ACTION PROPOSED: Accumulate information on condensate collected at the following locations

- a. Cities Service - Canadian, Hemphill County, Texas
- b. Pacific Lighting Service Company, Needles, Mohave County, Arizona
- c. Compressor Station No. 2, Flagstaff, Arizona
- d. Compressor Station No. 5, Thoreau, New Mexico
- e. Compressor Station No. 7, Mountainair, New Mexico

2. Total volume of condensate collected from the contaminated portion of the system having a PCB concentration of 50 to 500 PPM.

ACTION PROPOSED: Accumulate quantities of condensate collected in the system from Compressor Station No. 8 - Corona, New Mexico to Pacific Lighting sales point at Needles, Arizona.

3. Total volume of condensate collected from the contaminated portion of the system having a PCB concentration of 500 PPM or greater.

RESPONSE: PCB concentrations in the contaminated portion of the system do not normally run above 500 PPM.

IV. GAS STREAM SAMPLING

Gas stream sampling to be conducted in conjunction with condensate samples at the major sales points selected for condensate sampling (Part II, No. 1 above) using the June, 1981 "Method to Measure PCBs in Natural Gas Pipelines," EPA 600/4-81-048 (method section pages A-1 thru A-16). One gas sample to be collected at each of the three points as follows:

- (1) February, 1982
- (2) June, 1982
- (3) September, 1982
- (4) February, 1983

RESPONSE: No major sales points are designated for condensate sampling under Part II, No. 1 above. However, one gas sample will be collected at

TRANSWESTERN PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
(REFERENCE EPA LETTER OF 12-4-81)

the Pacific Lighting sales point at Needles, Arizona in accordance with the above schedule.

V. QUALITY ASSURANCE - TECHNICAL ASSISTANCE

EPA is to make available two "check" samples of pipeline condensate containing a known quantity of PCBs for analysis by laboratories utilized during this program.

ACTION PROPOSED: Labs to be used are as follows:

- (1) Primary Lab-
Texas Eastern Analytical Laboratory
Texas Eastern Gas Pipeline Company
P. O. Box 2521
Houston, Texas 77001
Attention: Mr. Douglas Dodds
- (2) Alternate Lab
Southern Petroleum Laboratories Inc.
8880 Interchange
P. O. Box 20807
Houston, Texas 77054
Attention: Mr. Sammy Russo

IV. SUBMISSION OF INFORMATION

1. An initial report is required to be submitted to EPA by January 12, 1982 to include:
 - (a) List of exact location of sampling sites including type of sampling point (scrubber, drip, etc.) and category under which the point falls in Part II above.

RESPONSE: See information furnished for Part II above. Condensate samples will be collected at meter station facilities, except as otherwise noted.

- (b) A list of condensate collection points for reporting under Part III above if condensate is not removed at the exact location where samples will be collected.

RESPONSE: It is proposed that all condensate collected for reporting under Part III will be collected at the facility location.

- (c) A system map indicating the location of sampling points (Part II) and condensate collection points (Part III).

RESPONSE: See attached system map.

- (d) The name, address, and contact person at each laboratory used.

RESPONSE: Reference Part V above.

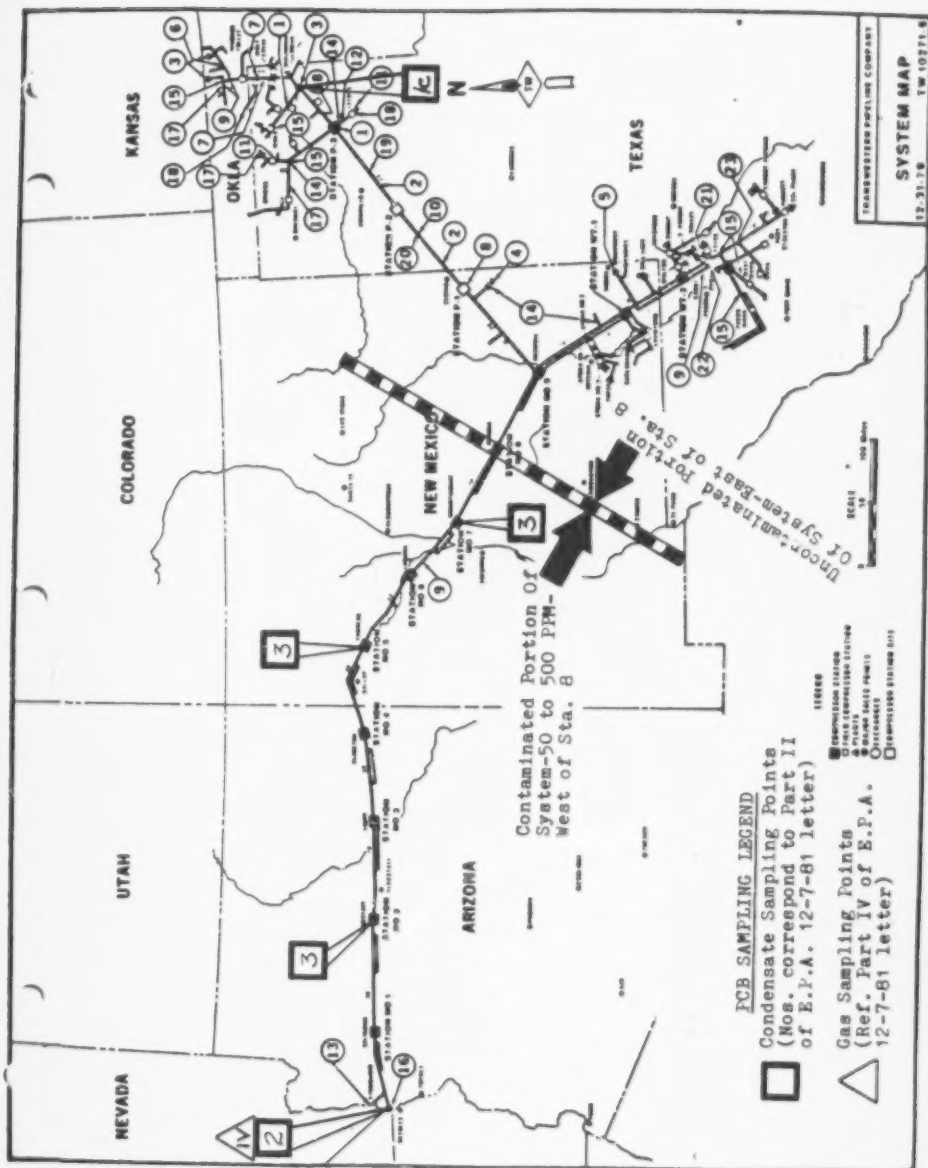
TRANSWESTERN PIPELINE COMPANY
PCB REMEDIAL MONITORING PROGRAM
(REFERENCE EPA LETTER OF 12-4-81)

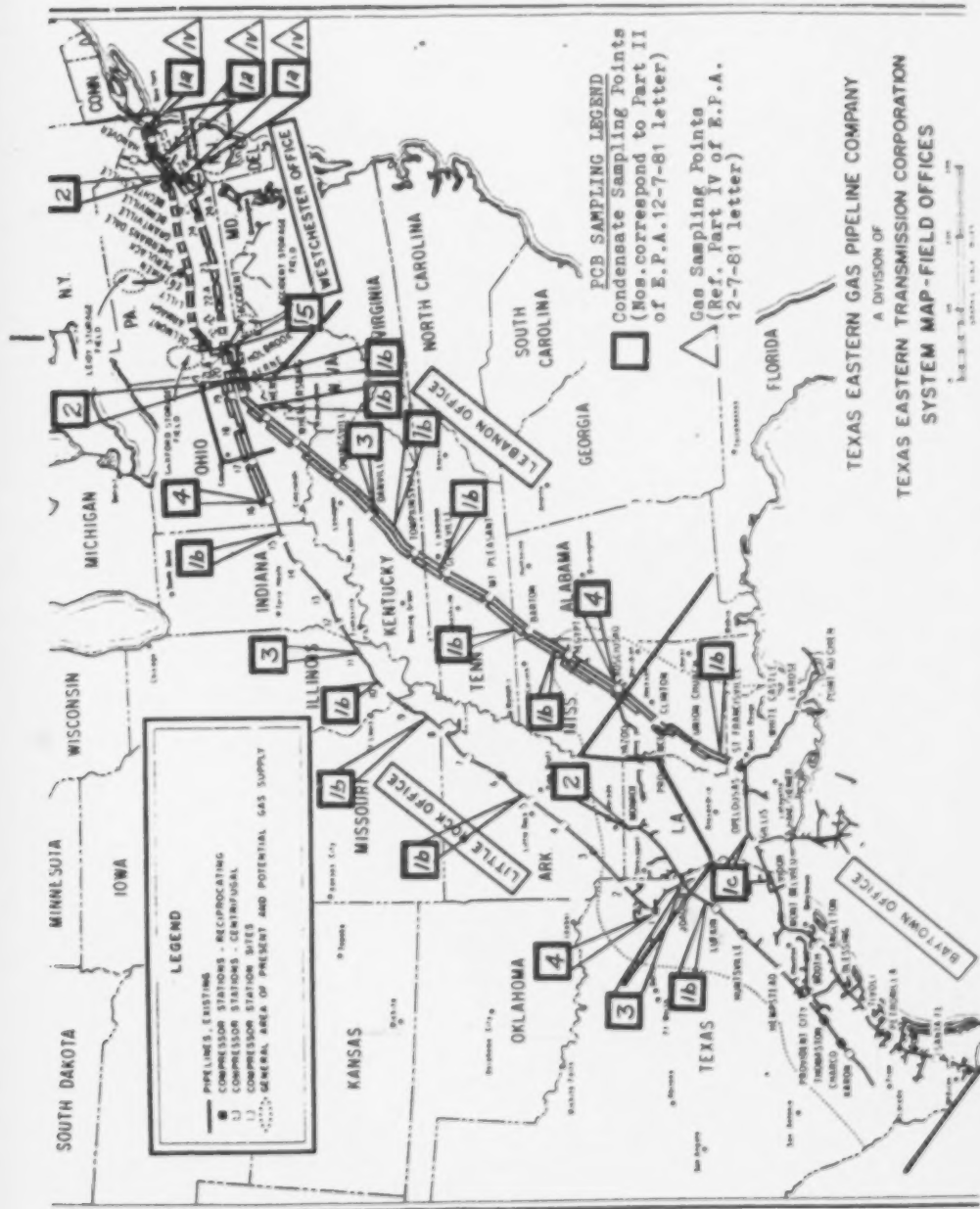
2. Monitoring reports to be submitted as follows:

<u>Report Date</u>	<u>For Samples Collected During</u>
January 15, 1982	December, 1981
April 15, 1982	January-March, 1982
July 15, 1982	June, 1982
October 15, 1982	September, 1982
January 15, 1983	October-December, 1982
April 15, 1983	January-March, 1983

ACTION PROPOSED: Because of the timing of the receipt of the EPA letter and the time needed to develop and implement the monitoring plan, it is proposed that sampling will commence with the January-March, 1982 sampling period, reportable April 15, 1982.

1-11-82





TRANSMISSION PIPELINE COMPANY
 MONITORING CONDENSATE SAMPLING RESULTS

(Reference EPA Letter 12/7/81)

April 15, 1983

Location	Station Name	Date	Sampling Number	Results (1984)*	Comments
(Distribution supply location on a section of system which is not contaminated)					
Hemp Hill County, Texas	Cities Service - Canadian	3-2-83	291	LT 1	
(Point on contaminated portion of the system where gas is supplied to another transmission company)					
Needles, Arizona	Pacific Lighting	3-1-83	289	84	
(Collection point within the contaminated portion of system where large volumes of condensate are normally found)					
Flagstaff, Arizona	Compressor Sta. #2	3-1-83	288	23	
Thoreau, New Mexico	Compressor Sta. #5	2-15-83	213	154	
Mountainair, New Mexico	Compressor Sta. #7	3-15-83	323	26	

*Analysis - Texas Eastern Analytical Laboratory
 Analytical Aroclor 1242

Senator LAUTENBERG. You signed a Consent Decree with EPA in 1982. Yet, despite that agreement, you continued to use the pits for disposing. Did that decree, in your judgment, prohibit you from using pits?

Mr. CHURCH. Senator, I believe that Consent Decree that you mentioned had to do with the lubricating oils in the turbines and not the liquids condensates.

Senator LAUTENBERG. You mean though the contaminants were the same, it was the manner of disposal or the source for these materials that you were concerned with. You were not expressing your belief that the rules meant that you had to get rid of them with the exception of where they came from. If they came from the old lubricating oil, that meant that you had to stop using the pits; but if it came from leakage through the system, is it your interpretation that you were permitted to continue using the pits?

Mr. CHURCH. As I said earlier, the lubricating oils were taken out and put into drums and were properly disposed of, to the best of my knowledge.

The condensates that we are talking about here, what I said earlier, that I believe that our personnel that were handling this matter felt that there was some type of at least unwritten understanding, that the EPA knew we had this problem, we were working diligently to correct it.

Senator LAUTENBERG. And you could continue to violate, which is really where we are going, the agreement and the law because the source for these contaminants was different.

Mr. CHURCH. No, sir. I do not want to insinuate that the EPA said we could do that by any stretch of the imagination.

Senator LAUTENBERG. Yes, but the management of your company was making a decision, and their decision was: well, okay, if these PCBs come from the lubricating oil that we are using, we cannot put that into the pits any more; but if they come from another source, it is more—I do not want to trivialize this—it is more convenient to use the pits or it is more feasible to use the pits.

Mr. HOMER. Mr. Chairman, on several occasions here this morning, a comment has been made about dumping PCBs into pits. I would like to emphasize that this is not correct. What was placed in the pits is the pipeline liquids from the blow-down of the pipeline. The PCBs lubricants that are the subject of the Consent Order, the ones removed from the compressors, were properly disposed of and not placed in the earthen pits.

I think that is an important distinction, and that was covered in the testimony as far as the chronological development. The issue at hand here is the pipeline liquids that were removed from the pipelines during the blow-down. And then since 1981, it was determined that those liquids did contain some PCBs.

Senator LAUTENBERG. Mr. Homer, I know that we want the record to reflect very precisely what happened and what the intent was. It is my view that the law and the rules prohibited dumping that material. I think we are splitting hairs when we say that the material that was dumped, the residual was the PCBs. I do not want to get in a technical argument with you.

I want the record to properly reflect what the intent of the company was, what happened with the information that was transmit-

ted, and whether or not the final result was that the residents and the neighbors in the community were having PCBs collected in their area when, in fact, the law said you cannot do it.

To Senator Breaux's question about the continued use of the lubricating material after 1970, Monsanto stopped manufacturing the material in 1972, I believe.

Mr. CHURCH. That is correct.

Senator LAUTENBERG. You said, Mr. Church, that you continued to use it until 1977.

Mr. CHURCH. That is correct, sir.

Senator LAUTENBERG. Now, if they stopped making it, and the information was then pretty obvious that this was dangerous material, had you decided just to draw down the inventory? Is this a factor of cost that dictated that policy at the time?

Mr. CHURCH. I think what dictated the policy is we had an inventory on hand. And as I said earlier, I do not think the Texas Eastern personnel had any idea about PCBs and, really, we did not have all this information that we have today. Since we believed that this oil was being used in an enclosed system, we did not feel that it posed that great a threat.

Senator LAUTENBERG. Did you take the opportunity to notify and protect the on-site workers? It is confirmed, I believe, that this stuff does not migrate easily. But people were working with it all the time. Were they notified? Was there general notice throughout the company, Mr. Homeyer, to your knowledge, about the risk involved with working with this material?

Mr. HOMEYER. I would like to defer that to Mr. Church, since he was involved in that part of the operation.

Mr. CHURCH. Yes, sir. We have correspondence in the files where in 1981, there were presentations made to the field supervision of Texas Eastern that completely reviewed what we at least knew about PCBs at that time. Our safety personnel had written safety procedures, and our employees were aware, and we did have safety procedures for handling PCB materials.

Senator LAUTENBERG. Testimony indicates that the practice by the industry was to burn pit condensates. I think this can produce dioxins, can it not?

Mr. CHURCH. There is some disagreement, I think, in the scientific community. Whether it can or not, I am not qualified to comment on that, sir.

Senator LAUTENBERG. Let's leave that question and ask generally: did Texas Eastern burn material in New Jersey or elsewhere on a routine basis?

Mr. CHURCH. I believe in New Jersey, the pit was closed there; the final portion of it was closed in 1972. And I would answer your question: yes, we did burn pits, to the best of my knowledge, until the late 1970s.

Senator LAUTENBERG. Including the one in West Amwell?

Mr. CHURCH. I cannot specifically say, sir. It is very possible that we did. I just do not know for sure.

Senator LAUTENBERG. Senator Breaux, do you have anything else you wanted to ask this panel?

Senator BREAU. Thank you, Mr. Chairman.

I have a follow-up question on a letter from Texas Eastern to John Seitz of EPA. In that letter you say that none of the drained lubricating oils containing PCBs, PCB-based lubricants or any subsequent replacements were placed in the pits; the only materials that were disposed of in the pits that may have contained PCBs were pipeline liquids which may have been contaminated by PCB lubricant drips and waste oils.

What waste oils would you be talking about at that time?

Mr. CHURCH. I would say they are referring to oils that were around the station. I think mainly they are talking about drips off of the units. They have sumps on the units around the outside type units, the sump drains that catch and collect, and it is possible that they poured that oil into the pits.

Senator BREAU. The only other area that I am unsure of what you are telling the committee is that after you got the letter in February of 1981 telling you that PCBs found in condensate as a real bad problem and telling the company that you are required by law to follow strict procedures in storing and labeling and disposing and in keeping records on that activity, what happened after that?

Is there anything that you can point to from EPA or from anybody else that would have allowed the continuation of this placing of that PCB condensate material in earthen pits, in open pits? I do not think that TSCA would have allowed that type of disposal of PCBs.

You are notified that you have a condensate PCB problem. You are notified that that brings you under TSCA with regard to disposal. Yet the company obviously continues for a period after that to place it in earthen pits. Is there anything, a letter, a phone call, conversation, a meeting, that would have said: that is a proper procedure; you are okay if you do that?

Mr. CHURCH. No, sir, I do not believe there is any such letter in the file that states that.

Senator LAUTENBERG. Thank you, Senator Breau.

We are going to be submitting questions to you in writing. We would ask for a quick response from you, and I again remind you that the answers are also included in your sworn statement under oath. We thank you very much for being with us and for telling us what you did. Again, we would appreciate a quick response to any questions that are submitted.

Mr. HOMER. Thank you very much, Mr. Chairman. I assure you that we will be responsive and cooperative with this committee, and we are committed to move forward with our remediation efforts in this regard.

Senator LAUTENBERG. Thank you.

The next panel is from EPA: Mr. Adams, Mr. Daggett and Mr. Conroy. I am going to ask the panel to stand and take the oath, if you do not mind. Raise your right hands as I ask: Do you swear that the testimony you will give to this committee is the truth, the whole truth, and nothing but the truth, so help you God?

[The panel, en masse. I do.]

Senator LAUTENBERG. Thank you. Who is going to speak first? Mr. Adams?

Mr. ADAMS. Yes.

Senator LAUTENBERG. Welcome, all of you. We look forward to hearing from you. You have listened carefully, I assume, to the testimony that has already been given. It is likely that there might be some differences of view among the various panels, and we want to get to the bottom of that.

We ask you to be forthright, which I am sure you will be, and to keep your oral testimony to within the five-minute limit. We will accept full statements for the record. We invite you to start, Mr. Adams.

STATEMENT OF THOMAS L. ADAMS, ASSISTANT ADMINISTRATOR, OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY CHRISTOPHER J. DAGGETT, REGIONAL ADMINISTRATOR, REGION II; A. E. CONROY II, DIRECTOR, OFFICE OF COMPLIANCE MONITORING, OFFICE OF PESTICIDES AND TOXIC SUBSTANCES; TIMOTHY FIELDS, JR., DIRECTOR, EMERGENCY RESPONSE DIVISION; AND FREDERICK STIEHL, ASSOCIATE ENFORCEMENT COUNSEL, TOXICS LITIGATION ENFORCEMENT

Mr. ADAMS. Thank you, Mr. Chairman. I am Tom Adams, the Assistant Administrator for Enforcement and Compliance Monitoring at the Environmental Protection Agency. I am pleased to be here today to discuss with you our efforts to address the problem of the contamination along the pipeline and along the other pipelines that we have under consideration. I appreciate your acceptance of my full statement for the record, which I am hereby submitting, and will turn at this moment to very briefly summarize points that I would like to make on that.

At the outset, let me say that in recent weeks we have worked very closely with individual members of Congress and their staffs. We are doing all that we can to keep you fully informed on this very important matter. We will continue this close cooperation.

We have also worked closely with the states during the past several weeks, as we have gone out to look at sites, to take samples, and to assess the problem. In many instances, it is individual states that have done site assessments and sampling. Their cooperation has been outstanding.

We have also taken steps to keep key State officials, governors, attorney generals, State health directors and environmental officials informed of our activities. This, too, will continue.

We have provided your staff with a thorough chronology of events dating back to 1981 when we first learned of the problem of the contamination, which has been mentioned earlier. Since that time, we have taken a series of actions to address the problem.

In early 1981, we instituted a national sampling program by natural gas pipeline companies to determine if PCB contamination was present in the pipeline system. As a result of that effort, we identified a number of companies thought to have problems. We then implemented a program to monitor and remove PCB-laden condensates from pipelines.

Over the past several years, we have taken several enforcement actions against Texas Eastern and other pipeline companies where we found PCB problems.

In reviewing the Texas Eastern chronology, it can be clearly seen that EPA has pursued the PCB problem in good faith. Admittedly, we might have done certain things more quickly than we did. Nonetheless, in all cases we took actions to address the problem as we understood it at the time. Over the bulk of time, we relied heavily on data and other information provided to us by the company.

As we have learned more about the problem, and particularly in recent weeks, we have taken increasingly aggressive steps to respond. During the past two months, we have accomplished a great deal. We established a special agency task force to address the problem and coordinate our response. That task force is chaired by the deputy administrator, Jim Barnes.

We have visited every known site along the Texas Eastern system and assessed each for possible human exposure. We have also taken soil and water samples at many sites. These samples, as you well know, are now being analyzed.

Beyond the Texas Eastern system, we have begun assessing sites along seven other pipeline systems thought to have PCB problems. We are asking for additional information from six others.

At the same time, we are looking back at the process used to respond to the Texas Eastern situation. A review is under way, focusing on the amount of time taken to complete various steps to determine if changes should be made to include our enforcement program in large, complex cases of national scope. We will keep you informed of the progress of this review and any proposed plans for improvement.

One further point, Mr. Chairman; we will aggressively pursue all civil and criminal enforcement options available to us against any pipeline company found to have violated our environmental laws. We have not closed the door to any legal option.

Let me conclude on this note. EPA has worked very hard, particularly during the past several weeks, to address the PCB problem associated with gas pipeline systems. Federal and State personnel have worked weekends and evenings to get to every site along the network. Samples have been taken at many sites and are being analyzed. Most of the sites are located, as previous testimony stated, in remote areas, and most are secure from public access.

As our analytical results become known, we will share them with this committee, others in Congress, the States, the affected citizens, and the American people. We will pursue all enforcement options that are available to us. Anywhere we find an immediate threat to human health, we will make certain that quick and effective action is taken.

I thank you, Mr. Chairman.

Mr. ADAMS. Today I have with me at the table Chris Daggett of Region II, who has a brief statement. In addition to that, we have Tim Fields at the far right, your left, the director of emergency response division in the superfund office. To my left is Gus Conroy, the director for the office of compliance monitoring. And to my extreme left is Fred Stiehl, who is in charge of the national enforcement case involving Texas Eastern Gas Pipeline.

Senator LAUTENBERG. Thank you, Mr. Adams.

Mr. Daggett?

STATEMENT OF CHRISTOPHER J. DAGGETT, REGIONAL ADMINISTRATOR, REGION II, ENVIRONMENTAL PROTECTION AGENCY

Mr. DAGGETT. Thank you, Mr. Chairman. My name is Christopher Daggett, and I am the Regional Administrator for USEPA in Region II. The region is comprised of the States of New Jersey, New York, Puerto Rico and the Virgin Islands.

Mr. Adams has provided you with information on the agency's actions with regard to PCBs in natural gas pipelines since they were first discovered by the Long Island Lighting Company in January 1981. I will give you a summary of Region II's more recent efforts to investigate those sites in Region II where PCBs have disposed in earthen pits.

An April 9, 1986 memorandum from headquarters notified us of Texas Eastern's past practice of using earthen pits for disposing of pipeline liquids and waste oils. Some of the pits were reported to be contaminated with PCBs. One of the PCB-contaminated sites reported was the Lambertville facility.

We were informed that headquarters had asked the company to provide additional information concerning these pits, which would be forwarded to the regional offices for follow-up and action, if warranted.

The region was informed by a December 1, 1986 memorandum from Assistant Administrator Thomas Adams of the status of the Texas Eastern investigation. We were requested to coordinate any enforcement actions against the company with the Office of Enforcement and Compliance Monitoring. The letter also indicated that Texas Eastern had initiated a study to determine the extent of possible contamination and that the report would be submitted to the agency in January 1987.

Because headquarters had taken the lead in enforcement against Texas Eastern, and because we expected site-specific information from the company's report in January, we did not initiate any inspections at the Texas Eastern facilities in the region at that time.

Region II was informed by memoranda dated February 19 and 20, 1987 from Gene Lucero, director, Office of Waste Programs Enforcement, and Thomas Adams, assistant administrator, Office of Enforcement and Compliance Monitoring, that the Texas Eastern Gas Pipeline Company had reported the use of earthen pits for PCB-contaminated condensate at their Lambertville and Linden compressor station facilities in New Jersey. Headquarters specifically asked in that memo that we notify the state of this information by March 2.

We informed the New Jersey Department of Environmental Protection of the company's past practices at these facilities on February 21 of this year. On February 25, we asked for the DEP's participation in preliminary assessments of the two compressor stations.

On February 26, Region II and DEP staff inspected both the Lambertville and Linden sites. The purpose of these inspections was to determine if there was a possible immediate public health threat.

With respect to Lambertville on February 26, the preliminary assessment was conducted at the Lambertville site by EPA Region II staff and representatives of the New Jersey DEP and the Hunter-

don County Health Department. Discussions with the Hunterdon County health officer indicated that residents living in the immediate vicinity of the facility obtain their drinking water from private groundwater wells. Working with the health officer and the NJDEP, we identified nine residences to be sampled.

The homeowners were notified on February 27, and on February 28 samples were taken from the nine residential drinking water wells and from one well on the Texas Eastern facility property. The water samples were analyzed for PCBs and for purgeable organic compounds.

Analysis of these samples was completed on March 4 and data-quality-assured at approximately 3:00 p.m. on March 5. The data showed detectable levels of PCBs in five of the nine residential wells. The sample from the well on the facility property did not have detectable levels of PCBs. No purgeable organic compounds were discovered in the water samples.

We asked the Agency for Toxic Substances and Disease Registry for an assessment of the risks to the residents using this water. They orally advised us that anyone whose well samples showed levels above 0.9 parts per billion should not continue to use the water for drinking purposes and that all use of the water should be eliminated within a reasonable period, approximately four to six weeks.

Normal agency policy would have called for completion of confirming tests of these nine wells before taking any action. However, in this case, because of the high level of public concern, the potential endangerment to human health, and the length of time the chemicals were available in the environment, we decided to take the precaution of recommending that people not drink their water while the confirming tests were being completed.

We then notified the NJDEP and the Hunterdon County health officer, who met privately with each of the affected residents that evening, March 5, to advise them to stop using their well water for drinking purposes and that there was a need to provide water purification systems, such as carbon filters, in a four-to-six-week period on the wells that tested positive. They were also advised that either EPA or Texas Eastern would begin providing bottled water for them as soon as possible.

In a meeting with NJDEP and the company on March 6, the company agreed to provide direct delivery of bottled water to the five homes with detectable levels. This began on Friday evening, March 6. In addition, the company made bottled water available the following day at the Mount Airy municipal building to all other residents of West Amwell Township who wished to receive it.

Texas Eastern also agreed to design and install water purification systems, such as carbon treatment units, at the five homes at which PCB contamination was found in the first round of sampling. These systems will be required to result in a drinking water supply with a concentration of less than 0.1 part per billion detection limit. These systems will also be provided for any additional residences found to have PCB contamination by further sampling results.

On March 6, we resampled the nine residential wells and one well on the facility property for confirmation of the first analysis.

We also expanded the area of investigation and took samples from eleven additional homes and from two schools in the area. Multiple samples were taken from these wells throughout the day.

We have completed the analysis of the first set of samples from the original nine homes and the company well. The preliminary information showed nondetectable levels of PCBs at the 0.1 part per billion detection limit.

We now have reason to believe that laboratory contamination may have been the cause for the positive findings of PCBs in the first samples that were taken. We have notified township officials, the residents and the company about this information and that our second-round data results indicate that PCBs were not found above the 0.1 part per billion detection level.

Until we receive the results of a third round of data being analyzed by our contract laboratory, we are recommending that the five residences continue using the bottled water. We have also developed a further plan to ensure that we have a true picture of any contamination of drinking water wells in this area.

At this time we will not ask the company to install water filtration systems. Water filtration systems will be installed only if the third round of sampling or any subsequent sampling indicates PCBs above detection levels.

I hope this information has been helpful. We will be pleased to provide you with any background documents you would like relative to Region II's involvement since 1981. Of course, I would be pleased to answer any questions that you have.

Senator LAUTENBERG. Thank you, Mr. Daggett.

Who is next?

Mr. ADAMS. We have no further statements, Mr. Chairman. We will now gladly respond to your questions.

Senator LAUTENBERG. We are all relieved by last night's news about the recent round of tests showing no detectable levels of concern. The people, obviously, of West Amwell have been through a bit of a trauma due to what is contended to be a lab error. We do not yet know with certainty, do we, that the wells are not contaminated? And we are going out for, if I can describe it appropriately, a third opinion to make sure that what we found in the first place was not really true. Is that where we stand now?

Mr. DAGGETT. Yes. I want to emphasize that we do know that it was laboratory contamination. We do not know if it was solely laboratory contamination that resulted in the positive findings. There may indeed have been a few hints. It is true that we are continuing to analyze samples that were already collected and that we are designing additional sampling procedures to make doubly sure.

Senator LAUTENBERG. Do you mean the samples collected from the original five or the addition?

Mr. DAGGETT. The original samples have been analyzed. The morning of March 6 when we collected samples, we took four samples from each of the original nine homes in the morning and two additional samples in the afternoon, as well as additional samples from eleven new homes and the two schools.

Of the four sets of samples collected on the morning of March 6, the first two sets were analyzed at EPA's lab in Edison. It is that first set of samples that showed nondetectable on all nine residential

wells as well as the company well. The second set of samples from that morning will be available next week, and all remaining samples of the morning and the afternoon were sent to a contract laboratory where they will be analyzed and available about mid-April.

Senator LAUTENBERG. You are recommending, however, that the residents continue to use bottled water.

Mr. DAGGETT. Yes. We are recommending that they continue to use it until the results of the samples that we will collect tomorrow come in. And then if the samples that we have collected, those that we already have in our labs plus Wednesday's samples, all show nondetectable, then we would recommend that people no longer need to use bottled water.

Senator LAUTENBERG. I want to be sure that we have some assurances that the contaminated sites are going to be thoroughly cleaned up. Can I assume that the agency intends to apply the Superfund requirements in cleaning up the sites in addressing the water contamination problem? That is the toughest standard, I think.

Mr. ADAMS. Mr. Chairman, Fred Stiehl, who is handling the case from the national perspective, will respond to that.

Mr. STIEHL. Mr. Chairman, it is our desire, as we indicated, to enter into a settlement with the company to address all of their sites, and that settlement will require cleanup of all of the sites pursuant to the EPA standards. We intend to take a look at all of the appropriate standards under all of the statutes that we have. That would include the Superfund.

Senator LAUTENBERG. And you would require them to conform to the most rigid standard that could apply in this case.

Mr. STIEHL. We would require them to comply with all of our regulations and all of the standards that we have got developed.

Senator LAUTENBERG. Is it your belief that only TSCA and Superfund applies here? How about RCRA?

Mr. STIEHL. No. It appears to us, based on the information we received in the Weston report, that RCRA would also apply as well as TSCA and Superfund.

Senator LAUTENBERG. EPA recently went to test another site in New Jersey. Is that correct, Chris?

Mr. DAGGETT. Yes, it is.

Senator LAUTENBERG. That site belonged to another pipeline company, is that correct?

Mr. DAGGETT. Yes, it is. It was Transcontinental Gas Pipeline Corporation.

Senator LAUTENBERG. Does EPA believe that other companies might also be dumping or might have dumped PCB-carrying fluids into pits, Mr. Adams?

Mr. ADAMS. The program has sent a request, which Gus Conroy will discuss.

Mr. CONROY. There were 13 pipeline companies that were involved. Texas Eastern was the one that we concentrated on. The other 12 companies we are checking on and have checked on were part of the remedial program back in 1981. We have had no information until just recently that they had dumped anything into pits. One company up in Wisconsin, Americal Natural Resources, has told us they have some 27 pits that we would want to look at.

Those pits have been put into the process of Superfund, and we are going out now and examining them to get a first reading on them.

Senator LAUTENBERG. Do you have any indications of how many, if any, of those other companies continued to use the pits beyond the date that it was recommended that these pits no longer be used?

Mr. CONROY. No, sir, we do not. We have requested information from those companies under penalty of law to provide that information to us.

Senator LAUTENBERG. What we are trying to understand here is the sequence of events and what may have delayed the EPA headquarters from addressing this situation. Now, you knew that Texas Eastern was dumping after the August 1985 meeting with you, is that correct?

Mr. CONROY. Yes, they said that they had a problem.

Senator LAUTENBERG. Yet prior to the newspaper accounts, EPA did not notify State, local officials, or the public for roughly 18 months after that knowledge of the pit use, is that correct?

Mr. CONROY. Yes, sir, it is.

Senator LAUTENBERG. Why did it take that long? Is there not a responsibility for the agency to notify the community through the various agencies for a response?

Mr. CONROY. I think we should be up front and say that we should have acted faster. There are a number of reasons. TSCA is a Federal program and not a State program. We did not have specific information from the company in order to notify the States of specific sites until December of 1986, when the first Weston report came in, the actual report.

Mr. ADAMS. Mr. Chairman, the major action started around December when we had enough facts to operate. December of the past year is when we really got a handle on what had transpired, what was going on, full data to operate with.

Senator LAUTENBERG. But in November 1985, your agency knew that the pits had been used for that period of time, that the material was there. And despite the candid response that you should have moved sooner, we are talking about a period at a minimum from November of 1985 to December 1986 in which you waited for information, in which the company was not responsive? What happened during that period?

Mr. ADAMS. I think what happened there, other than Mr. Conroy's response of definitely perhaps we should have, was a judgment call at the time, rightly or wrongly, that said, as you said earlier, PCBs do not move, they do not migrate. They had been led to believe, also at the time, that all of the sites were exceptionally remote, that they were away from human habitation. And these were the facts that they were working with at that time. The facts started changing as we got close to December of 1986.

Senator LAUTENBERG. So because of the uncertainty, no one at the agency pressed this case.

Mr. ADAMS. No, Mr. Chairman. I think it was not so much the uncertainty, as the first consideration was, say, let's look at the absolute risk factor here, the health, who will be affected by this, what are the safety hazards involved, health, human interest. And a judgment call was made at that time that these are in remote

areas, number one; secondly, that we do not have much data to go on, we need something further to develop before we go forward.

It is my impression that at that time perhaps the wrong decision was made.

Senator LAUTENBERG. Was there, would you say, Mr. Adams, a diligence within the agency to search out this information rather than assume that the information about lack of spread of this material was acceptable? Was there kind of just a breath-holding period during that period of time?

Mr. ADAMS. You used the expression earlier, Mr. Chairman, of being asleep at the wheel. I am not too certain that that is correct, but it would come somewhere close to it, from my perception at that time.

I might defer on this to Mr. Conroy for his part of it, but the concept here is one of they had asked for information and it was dribbling in very, very slowly. As you well know and as the committee knows, much of what we do in Government involves the voluntary basis for information. We act on the good-faith principle, and people bring in their information. It is like an IRS report. We are the guys at the end of the road in enforcement that play the traffic cop when they do not turn in the right kind of materials and when mistakes are made.

Would you like to say anything, Mr. Conroy, on this?

Mr. CONROY. Mr. Chairman, I think that the agency was surprised in August of 1985 when this company came—

Senator LAUTENBERG. Even though in April of 1985 Texas Eastern's sister company was fined \$125,000 by Region IX for dumping PCB wastes in pits in Arizona. I assume it triggered off some kind of alarm system. At least it should be heard beyond Region IX. A fine of \$125,000 is not an insignificant penalty.

Shouldn't someone have said, maybe we ought to take a look at this other stuff? Or was it: well, we are going to wait this company out and make sure that one day they are going to tell the truth?

Mr. CONROY. The follow-up to the Region IX complaint: at least we went out to a firm on the East Coast, and we found out that again Texas Eastern had violated the law; they were not keeping a record, per the requirements of the statute. But we did not find a pit. It was at that time that we started to get concerned about Texas Eastern. This was not an accident out in Arizona, Region IX.

Senator LAUTENBERG. It sounds like diligent enforcement in Region IX. I am curious as to what happened in the rest of the agency.

Let me ask you this. Was Texas Eastern, in your judgment, not forthcoming in that period? You described the term, Mr. Adams, as dribbling information. That is less than forthright. That is less than energetic. You were not asking, and they were not telling, is what I get out of this.

Mr. CONROY. I think the company was less than forthright. They were warned back in 1981 that they had to comply with the disposal requirements of the PCB rule. They had reported to us on a quarterly basis for two years that they were doing exactly that, that they were storing them in accordance with the rule and that they were burning them at incinerated permitted sites around the country. Those reports continued to come in right up until 1985.

Somebody said we were asleep at the wheel. We really did not have an indication that this company was not being forthright and was not complying with the statute. The Arizona situation came up. Then the Pennsylvania situation came up. Then they came in and said: hey, we have got a problem with pits.

Yes, we were concerned at that time. We did not have enough information to immediately do something. It was a turnaround situation, something that had been voluntarily complied with, we thought, and all of a sudden three or four years into a program they are telling us that they are not totally complying.

Senator LAUTENBERG. It sounds to me a little bit, Mr. Conroy, like you were sitting in the house, the house was on fire, you could smell the smoke, feel the heat, but you were waiting for the fire department to come out and tell you that your place was ablaze.

Senator Breaux?

Senator BREAU. Thank you very much, Mr. Chairman.

With all due respect, this is not a case of dozing at the wheel; it is more like a Rip Van Winkle performance. I cannot buy the position that you found out about this in 1985 and 1986. The Chairman just pointed out; you write a letter in 1981 to the company, telling them that they have a condensate problem and to make sure they dispose of it correctly; you fine the company \$160,000 in 1982 for not carrying out the procedures properly; you have reports from EPA that show just what were Texas Eastern/Transwestern disposal records, that they have collected 600,000 gallons of PCB-contaminated condensate; then the record shows that they disposed of 38,000.

That should tell somebody they have 562,000 gallons that are missing. And all of this is back from 1981, 1982, 1983, 1984. You are saying now that EPA became aware of it 1985 and 1986. You have letters saying that you knew about it. You have imposed fines on the company, that indicates you knew something about it. You have disposal records that beg you to ask the question, where is it being disposed of, because you have no indication of where it is going.

How can you say you did not know about it until 1985 and 1986? This is not merely dozing at the wheel. Maybe none of you were there. I am certainly not getting personal. I am talking about the agency as an organization.

We have all those years. The record, I think, is clear that EPA was communicating with these people. The company, earlier, said that they sent EPA a letter in 1982 that says: we know that EPA has a problem with Transwestern, a subsidiary of Texas Eastern, and that the monitoring of that concern would be done in certain pits that Transwestern has. I think Texas Eastern is saying that letter is notification that they were putting it in pits.

Do you have any comment about all of that information that was available before 1985? I just do not buy the 1985-1986, we found out something was wrong, statement.

Mr. CONROY. It was not illegal to store the PCBs under the rule until 1984. They could hold those PCBs in storage for incineration. It was from 1984 that they could no longer hold them any longer than one year.

Senator BREAUX. Are you saying that when they started disposing of condensates after you sent them a letter in 1981 that says you have to follow strict procedures in storing, labeling and disposing of the material and keeping records on its disposition, that that period after that would have allowed them to spray PCB condensate in open pits?

Mr. CONROY. Oh, no, no, no. No, sir. They had to store it in accordance with the rule in tanks holding for incineration.

Senator BREAUX. Then the company says they were not doing it, that they were still continuing to put it in pits, and they notified you they were doing that because you could come out and monitor the pits. That was in 1982.

Mr. CONROY. I need to check that 1982 letter. I do not know what our response was, but I will check it.

Senator BREAUX. I am saying there is a whole series of things that indicated EPA was notified, was dealing with the company, was collecting an amount of 600,000 gallons of PCB-contaminated material through 1986, starting in 1982, and only a small fraction of it had any record of disposal.

The statements, I think, are clear that EPA should have known about it a lot longer than the 1985-1986 time period.

Who pays for the cleanup? Is it the Superfund and then you bill the company? Who pays the states like Louisiana? The Department of Environmental Quality hardly has enough gas to drive to the sites. They are doing the inspection. Why is EPA not doing the inspection? Is Louisiana having to do their own inspection of the pits? Why are you not down there inspecting in Louisiana? We have the highest contaminated pit in the Nation.

Mr. FIELDS. Senator Breaux, I can address that question. It is correct that Louisiana did the initial site assessment the last week in February. However, our EPA people, Environmental Services Division staff, have gone back to all the Texas Eastern sites in Louisiana, have done sampling, collected three samples at each site. We are now analyzing those samples and sharing that information with the state and the company. So we are aggressively following up on the initial site assessment that was done by the state. And the samples that were collected are being analyzed through our national contract laboratory program for the state of Louisiana.

Senator BREAUX. Let me ask another question. We have 270,000 miles of interstate pipeline that you are looking at. We probably have a million miles of intrastate pipelines. Is anybody looking at that, is there evidence that maybe the same type of procedure was used on intrastate pipelines as it was in interstate pipelines?

We have almost four times more intrastate pipelines that transport gas long distances, using the same exact type of equipment? Is anyone looking at intrastate pipelines?

Mr. CONROY. We have asked our regions to do that back in 1981, and they were doing that, yes.

Senator BREAUX. I hope they were doing it better than we are doing some of these other things since 1981. What is the report? It has been 6 years. Do we have any indication of what we are finding out there?

Mr. CONROY. We did not find any pits out there when we were doing that in 1981. We have some summaries from the region.

Senator BREAUX. That does not sound like a really strong answer. I feel that there is something that is still loose out there. There are a million miles of intrastate pipelines. Can you tell me with any degree of certainty that we do not have a PCB problem with intrastate lines?

Mr. CONROY. No.

Senator BREAUX. Mr. Chairman, I think there have obviously been some real mess-ups in this thing. I am not sure who, but I think we are clearly seeing that there are some serious omissions in the whole procedure and the operations here. I am not pointing a finger, because I do not know where to point right now. But we have a problem, and it is potentially even greater than what we have seen so far.

Thank you.

Senator LAUTENBERG. Thank you, Senator Breaux.

This committee has an obligation to get the information in front of it and for the appropriate parts of Government to point fingers. Certainly this is not a tolerable situation. In some cases, it is like the cop on the corner watching the burglary take place and not doing an awful lot about it.

What is the responsibility of the agency? Just sitting by and waiting for information to come, I think, is certainly derelict if not absolute abandonment of responsibility. We cannot take the explanation about, well, we just happened to miss this, as a vote of confidence that the agency is not going to not miss it in the future.

Senator Warner, do you have some questions to ask?

Senator WARNER. Thank you, Mr. Chairman.

I return to the issue that concerns me, and that is the pace at which both the Government and the private sector addressed this problem, in other words, the schedule which was established by someone to address the problem. You heard my question this morning. Essentially, my question is the same to you.

We have early indications in 1981, and you have the 1985 actions. Yet it was until the late fall of 1986 that steps were taken. Could you enlighten us on the scheduling? Who set the pace at which we addressed this problem?

Mr. STIEHL. Senator, if your question is going back to 1981, the agency did put the pipeline companies on a schedule to monitor and to presumably dispose of these PCBs in the contaminated condensates. As we got closer, as the company told us in August of 1985 that they had a problem with pits, we did at that point ask them to find out more information and to get back to us as quickly as they could. They indicated to us at that time that they had engaged a contractor to do a survey of their system and that that report would be forthcoming to us.

We did not get the first pilot survey until the spring of 1986, April of 1986. At that time we indicated again to the company that the information was not sufficient, and they told us that they would provide additional information to us.

That information was given to us in December of 1986. Obviously there is a long period of time between those requests, but the company indicated to us that there were 104 pits and there were some 60 sites that needed to be surveyed.

I think if you put this in the context of a situation that is very similar to Superfund sites, it takes some time to characterize those sites. We felt that we needed additional information.

We have that information now, at least on a preliminary basis, and that information that we got in December did confirm to us that we were dealing with more than just PCBs; whereas the company had indicated to us up to that time that the major concern was PCBs. We suspected when we talked to the company in November that there was more involved than just PCBs.

We decided at that time to bring in the Hazardous Waste people, the people in the Superfund office, to take a look at this. Our suspicion was confirmed when we actually got the report in December of 1986.

Senator WARNER. Was there an option for you to go out and do your own testing? If so, why did you not follow up on that option?

Mr. STIEHL. There is always, I would say, an option for us to go out and do that. I would say that there was no indication from what we knew at the time that there was a need to do the testing at that stage, given all the other things that the agency has to do.

We had always expected that when we entered into this agreement that there would be additional sampling. We know, in fact, that there needs to be additional sampling at each of these sites and that that will be done by the company under EPA oversight.

But we did not take the action to go out and independently assess that at the time because, as Mr. Adams indicated earlier, the information we had indicated that PCBs were relatively stable in the environment, that the sites were relatively remote, that in fact the company had taken steps to make sure that the sites were all secure. There was not any indication to us that we needed to go out and do that on our own.

Once we determined that there may be a problem, then we immediately went out and did an initial site investigation into each of these sites.

Senator WARNER. Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you very much, Senator Warner.

Mr. Conroy, I assume the company explained to you that their removal of condensates is preceded by the release of gas at high pressure. You are aware of that? They had to, therefore, install diffuser tanks. You knew that the diffuser tanks would likely resolve the technical collection problem.

But were you not curious about how the company intended to collect and dispose of the material at those locations before the tanks were installed?

Mr. CONROY. Yes, yes, we were, and we put them on a remedial program to tell us exactly how they were going to dispose of them.

Senator LAUTENBERG. Again, the information flow was not sufficiently quick for you to respond before the time that you did. Is that a yes?

Mr. CONROY. If I understand the question.

Senator LAUTENBERG. There was this lapse of time, 13 months. You knew that there was a problem of disposal, that all the tanks were not in place. We heard the tanks were being put in place. But during that period of time you did not inquire, you are saying and I am just confirming what was earlier said, as to what was happen-

ing with the material that was being collected. You were waiting for the company in this case.

Mr. CONROY. The remedial program required that the company report to us on a quarterly basis as to what they were doing with the condensate as they removed it. They did do that. We did not do a mass balance.

Senator LAUTENBERG. Mr. Daggett, I want to review for a moment Region II's action. On April 9, 1986, Mr. Neylan from Mr. Conroy's office wrote to his regional counterpart, including Ms. Metzger in your region. He informed Region II of the existence of the Texas Eastern pits, including those in West Amwell and Linden. The memo suggested that the region do some followup. It also suggested that Region II notify its Hazardous Waste staff about the pits. It appears, however, that Region II did not follow up, did it?

Mr. DAGGETT. On the contrary, Senator. I do not believe that April 9, 1986 memo indicates that the region should take any further action. The indication in that memo was that OCM, which is the group that sent this, would forward additional information received from Texas Eastern for regional follow-up and action under TSCA if warranted.

We had not had any indication to that point that there were any problems associated with the pipeline. We had, during the previous years, been corresponding with the company and with other pipeline companies, asking them for information, as I have indicated in the full testimony I have given to you.

We asked those companies essentially to monitor the amounts of PCBs and PCB content of any condensates removed from their system. They did that and indicated to us that they were disposing of them according to regulations.

That information, coupled with the fact that it was clear to us that this was a headquarters lead and that there was further information yet to come from the company, led us to believe that it was not a situation that warranted immediate attention.

We are, in the region, much like the headquarters. We are confronted with any number issues that come before us on a regular basis. Companies are constantly self-reporting information about their practices. When we find irregularities we pursue them.

I think the agency was pursuing the irregularities they had discovered here at headquarters level. Headquarters indicated to the regions that they were doing it. Again, in hindsight, it is easy for all of us, I think, to say we probably could have done some things quicker and maybe there were some signals we should have seen. But in fact, our knowledge of PCB migration and all the factors that we have already discussed led us to feel that it was not that significant a health threat, potentially, at the time to warrant going and taking any immediate action.

Senator LAUTENBERG. But you made certain assumptions about the containment, the earthen pits, and were satisfied so much that even though this memo recommends and says, you should also notify your respective regional hazardous waste office on this matter, you did not do that, did you?

Mr. DAGGETT. My understanding is that the memo was transmitted to our Waste Management division, and as they received it

they made essentially the same assessment that I have outlined to you, that there did not appear to be anything that warranted any immediate action. Then as a result, they did not do so.

Senator LAUTENBERG. At the distance that you are from this site, you made the evaluation that it was not necessary to follow up, despite the recommendation here.

Did you tell New Jersey DEP about this?

Mr. DAGGETT. Just a minute. I think there is a difference between saying to recommend that they notify the Office of Hazardous Waste for their followup and then whether or not that indicates they should take any followup.

Senator LAUTENBERG. But does that not suggest to you that you should have done it? You said you believed that the memo was circulated.

Mr. DAGGETT. Yes. And I am saying based on the information we had from the companies about their disposal practices, based on the information we had from the headquarters about their actions, and based on the facts that we knew about PCBs and the fact that we had further information coming from the company, we added all that together.

Again, maybe in hindsight we should have acted differently. I do not know. I think the decision was a prudent decision.

Senator LAUTENBERG. We can beat this horse a while longer, but I want to get on with it. I am surprised that it did not trigger, at the least, some curiosity on the part of the office, enough to say, okay, New Jersey DEP, you are the link, you are the connection in many cases with the local authorities. In this case the first level would have been the New Jersey Department of Environmental Protection.

Mr. DAGGETT. That is correct.

Senator LAUTENBERG. But it did not get a response from you. You made the evaluation that, again, as you said, in hindsight, it did not warrant going any further. Obviously, we would have saved a lot of time if you had. And you are the watchdog agency in this.

Senator Breaux, do you have other questions?

Senator BREAUX. Just a real quick one, Mr. Chairman.

We have this information, and I am trying to figure out exactly what it is referring to. It is the Texas Eastern and Transwestern condensate collection summary from January 1982 through September 1986. It talks about the number of gallons of PCB that are removed in the 50 to 500 parts per million range and that that has been removed and collected exceeding 500 parts per million range. Then it has a table that has PCB disposals greater than 50 parts per million PCBs.

Was this information that was being given to EPA pursuant to the remedial removal program? Is that what this information tells me?

Mr. CONROY. Yes. That is from the quarterly reports that the company submitted to us.

Senator BREAUX. Was it from the sites that had a collection system to collect the PCBs and then dispose of them?

Mr. CONROY. Yes.

Senator BREAU. So I would take it that it does not reflect those areas, like St. Francisville, Louisiana, that did not have a collection system and yet they were still blowing it out into an open pit.

Mr. CONROY. I would say that the answer was no, that the company did not report to us on that.

Senator BREAU. Did anybody in EPA, which is the next question obviously, get concerned about what they were doing with those sites that did not have a collection pit and that you knew about?

Mr. CONROY. We did not know about it, Senator.

Senator BREAU. Did anybody ask in 1981?

Mr. CONROY. I would say that we notified the company how to dispose of it, that they were required to tell us what they were taking out of the pipe and how they were disposing of it. They submitted quarterly reports.

Senator BREAU. And the quarterly reports referred to those sites that had collection systems, and you would find out how much they disposed of. But there were a whole bunch of sites that did not have collection systems. At those sites, they were disposing of it in earthen pits and continued to do it until 1984.

Mr. CONROY. It was 1984 from the testimony that the company made.

Senator BREAU. That is a huge vacuum as far as this Senator is concerned about what was going on. You had the data from the sites with collection systems, but you knew the data did not contain all the collection points.

Mr. CONROY. No, we did not know that.

Senator BREAU. Did you ask?

Mr. CONROY. I would have to go back into the records.

Senator BREAU. But probably not?

Mr. CONROY. I do not want to answer that right now. I would have to take a look.

Senator BREAU. That is, in my opinion, Mr. Chairman, a very big concern that we have. I do not have a real good answer for it, and I do not think that we received one this morning. Thank you.

Senator LAUTENBERG. Thank you, Senator Breau.

Senator Warner, you said you had something more?

Senator WARNER. Mr. Chairman, again I want to congratulate you for holding this hearing. You have proven yourself here in the Senate to be a watchdog for this sort of problem.

Gentlemen, in any situation like this there are lessons learned. Now, understanding you are out looking at other comparable systems, what lessons did we all learn from this so that we will not have a repetition? Perhaps this might be an opportunity for you to address your own resources. Are you short on dollars needed to do the work that Congress has given you under the various framework of laws?

Mr. ADAMS. Senator Warner, I think that any prudent manager would always ask for more resources, but that is not what I am going to say. What I am going to say here is simply that what we have seen during the course of this hearing and the events that we have seen is that we could have used, instead of more resources, a little more foresight. And I do not think enough was exhibited by EPA during this period of time.

Senator WARNER. I think that is a very fair admission by a public servant and, as such, I accept that. The lesson is learned. We will try not to have it repeated elsewhere.

Thank you.

Senator LAUTENBERG. Thank you very much, Senator Warner.

Thank you, panel. We appreciate hearing from you today. Again, we are going to keep this record open for two weeks for questions. We hope the answers will come quickly, but we will extend the record-open period for more than two weeks to get back a response. Thank you very much.

The next panel is comprised of Mr. John Gaston, Assistant Commissioner, New Jersey Department of Environmental Protection; Martha Madden, Secretary of the Louisiana Department of Environmental Quality; and Dr. James A. Brent, Program Manager, Office of Solid and Hazardous Waste, Louisiana Department of Environmental Quality.

I would appreciate it if you would stand to take the oath. Just raise your right hands, please. Do you swear that the testimony you will give to this committee is the truth, the whole truth, and nothing but the truth, so help you God?

[The panel, en masse. I do.]

Senator LAUTENBERG. Have you agreed among you who is going to testify first? Since I am from New Jersey and Mr. Gaston is from New Jersey, will our out-of-state visitors mind if I ask Mr. Gaston to present his first? Welcome.

STATEMENT OF JOHN W. GASTON JR., ASSISTANT COMMISSIONER, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. GASTON. Thank you very much, Senator Lautenberg. My name is John W. Gaston Jr. I am the Assistant Commissioner for Hazardous Waste Management for the New Jersey Department of Environmental Protection.

It is a pleasure to appear before you in your new capacity as Chairman of the Subcommittee on Superfund and Environmental Oversight. The subject of this hearing, the issues raised by the dumping of PCB-contaminated liquids by the Texas Eastern Gas line is certainly a topic which NJDEP has been concerned with.

The fundamental problem with which DEP has been struggling is that almost overnight we were advised that potential problems might exist in New Jersey at pipeline facilities owned and operated by Texas Eastern that pass through New Jersey and had observed problems associated with them.

Our commissioner discussed this problem with Regional Administrator Daggett on February 21, 1987 and received a letter on February 23, 1987 from Texas Eastern President Howard C. Homeyer. From the moment that we were notified, our first concern was whether or not any potential public health problems existed relative to the New Jersey sites that were involved in this issue.

Several telephone conversations with the company officials during the week of February 22 led us to conclude that one of the principal mechanisms for public health impact, the contamination of local drinking water supplies, had not been studied by the com-

pany. Furthermore, the company's survey report performed by Roy F. Weston indicated that PCB-dumping practices had taken place over a number of years at our West Amwell site.

These observations were verified when we met with the company on February 27. Our attention focused on the West Amwell site because of the impact on local individual wells there.

As a result, DEP and Region II EPA personnel instituted a first-round sampling program of the potable wells in the vicinity of the site. The record of the other testifiers covers what transpired with respect to that sampling program. Fortunately, as of yesterday at a joint DEP/EPA press conference, we were able to report some positive information with respect to perhaps there not being an observed problem as we first thought.

Of course, another round of testing and further verification is going to be necessary, and we are committed to pursuing this problem until we have a straight answer with respect to whether or not there is a problem and that we can give definitive guidance to our citizens.

Over the long term, Texas Eastern has obligations to New Jersey under New Jersey law. I want to make that point very clear. The Spill Compensation and Control Act requires notification of all spills of hazardous substances. This act, as amended in 1979, applies retroactively to all spills or discharges that occurred before that date.

Under New Jersey law, a site-specific program for dealing with the PCB contamination on site will require the department's participation and approval under a consent agreement and, if necessary, under directive or order.

We hope that New Jersey's specific and important concerns will not run headlong into conflict with the national master EPA agreement through the 16 states along the pipeline. The company has exhibited to date a willingness to address the potable water question head-on. We hope that their responsiveness will carry over in the weeks and months ahead as we pursue a comprehensive clean-up of the PCB waste in West Amwell. Of course, similar long-term programs will be pursued in Linden and perhaps, if any contamination is observed, in Hanover, New Jersey.

The timing of your hearing in response to this issue highlights the significance of the matter. As a state, New Jersey felt in a very disadvantaged position when it found out that discussions on the PCB problem had gone on between EPA in Washington and the company for over five years. Of course, that would have been okay if the bottom line, public health issues, had been addressed as part of those discussions.

Unfortunately, local site-specific issues were not in the forefront of those items discussed, to our knowledge. As a result, we had to scramble over the last several weeks to get a handle on the problem. We hope in the future that problems that involve our state, whether they be TSCA, RCRA or Superfund problems, are handled in the spirit of the language which was written into the new Superfund law that called for states to be equal partners in the resolution of serious hazardous substance contamination problems that exist.

The lesson that we have learned from our experience out in front of so many hazardous-waste problems is that no one individual, entity or government knows everything about environmental problems in our state. We have taken the position, as we did yesterday when we released new information with EPA, that an informed public can absorb new information and overview government actions in a way that is beneficial to all of us.

We intend to continue to operate our program in an open and cooperative atmosphere with local residents, local governments, county freeholders and health departments, state legislators, Federal government and Federal legislators. We trust that we will be afforded the same courtesies in the future.

If you have any questions, I will obviously be glad to answer them.

Senator LAUTENBERG. Thank you very much, Mr. Gaston.

Ms. Madden, are you next?

Ms. MADDEN. Yes.

Senator LAUTENBERG. Welcome. We await your testimony.

STATEMENT OF MARTHA A. MADDEN, SECRETARY, LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY, ACCOMPANIED BY DR. JAMES H. BRENT, PROGRAM MANAGER, OFFICE OF SOLID AND HAZARDOUS WASTE

Ms. MADDEN. Mr. Chairman, members of the Subcommittee on Superfund and Environmental Oversight, Honorable Senator Breaux from Louisiana, thank you very much for allowing us to be here today. I am Martha Madden, Secretary of the Louisiana Department of Environmental Quality.

My agency is charged with the responsibility of regulating the environmental activities in the state. On February 22, 1987 I was informed by a member of the local media that PCB-contaminated materials had been disposed of in fire pits in Louisiana over a period of years by Texas Eastern.

I was initially concerned about this situation, but when it was learned that EPA had known of the problem for several years and had failed to inform the state, I was perplexed and appalled. On February 23, 1987 I immediately began to take independent action to assess the scope and magnitude of the problem.

Direct contact was made with Texas Eastern officials. A five-person committee was established, consisting of myself and the following executive members of my staff: Dr. Hal Bollinger, deputy secretary; John Kouri, assistant secretary, Solid and Hazardous Waste; William DeVille, administrator of Inactive and Abandoned Sites Division; and Dr. James Brent, program manager, Office of Solid and Hazardous Waste, who is with me today.

Dr. Brent, a PhD in toxicology, has been coordinating the department's field activities in contact with EPA.

This incident has brought to my attention many technical issues which I am confident will be addressed in a timely and reasonable fashion. However, I am still concerned about the manner in which this problem has been handled. The lack of communication between EPA headquarters, EPA Region VI office and the respective states is inexcusable.

It is hoped that this committee will see to it that changes are made that will prevent the recurrence of this type of problem in the future.

It is my pleasure at this time to introduce Dr. Jim Brent from my office of the Louisiana Department of Environmental Quality, PhD in toxicology.

Dr. BRENT. Mr. Chairman, we appreciate the opportunity to be here today. I would like to emphasize, since we learned of the incident on February 22, that the state has basically taken the lead in Louisiana in trying to assess the problem. On the 23d of February we contacted EPA Region VI, a TSCA office, to try to determine more information beyond what was presented by the news media. At that point in time we were advised that EPA headquarters was handling the incident, and Region VI had very few details at that point.

We immediately contacted Mr. Steve Horton's office at Texas Eastern to try to determine additional site identifications. All we had at that point in time were very general descriptions. By noon of that day, we had determined the exact location of the sites; by the conclusion of that day, we had field inspectors in the field who had verified that the sites were in remote areas. We did not see any immediate danger to the public at that point in time.

We were advised at that same point in time that there was an additional site. The initial report had indicated five sites; it turned out to be six sites. We investigated all six within the first two days.

The same day, the 23d, we made arrangements with Texas Eastern personnel to meet with us in Baton Rouge on the 25th. Mr. Horton and other members of Texas Eastern met with us on the 25th. They gave us at that point in time all the documentation that had been previously provided to EPA. A lot of that information I think they presented today as part of their testimony.

I think we were the first State that Texas Eastern met with, and they have been extremely cooperative with us since that point in time.

We had numerous discussions with EPA Region VI between the 23d and March 2. On that date, it was decided that a preliminary assessment and site investigation would be conducted under Superfund. Under the cooperative agreement that we had with Region VI, it was agreed that the state would take the lead in these investigations and the state would be reimbursed for its effort under the cooperative agreement.

Starting on March 2, we conducted investigations at nine Texas Eastern sites. The number had grown from six to nine by that point in time. We did the sampling. The samples are going to EPA contract laboratories. We hope to have the results back shortly.

The visual inspection of the site only revealed one significant new bit of information. That was that one of the impoundments at the Larose site in Larose, Louisiana was outside the normal process area, was now part of an impoundment and was covered with about three feet of water. Our concern there is the possible migration of any material from that impoundment to adjacent waterways.

I think on March 2, as well, we were notified by Senator Breaux's office and Region XI that there were possibly another

four pipeline companies with sites in Texas. The information we had at that point indicated possibly only five sites with some potential.

Independently, we contacted the pipeline companies ourselves and have established that there are probably 25 sites with potential at this point in time. So the number of sites in Louisiana seems to continue to grow.

The number increased again on March 9 when we were advised by EPA that there were another seven Texas Eastern facilities. These are facilities that are classified as having no potential for PCB contamination, based upon a ranking system of high, low and no potential. We have no additional data at this point in time on those sites, but we will probably be looking at them as well.

Our main concern at this point in time is based upon a survey done by the Louisiana Department of Natural Resources. They have done a survey of the pipeline industry in the state. They indicate to us that there are 95 individual pipeline companies engaged in the transmission of natural gas in the state of Louisiana.

We have been attempting to determine from EPA Region VI if any survey was conducted to establish PCB-disposal practices at these facilities. The information to date is they are unaware of any such survey. We are currently preparing, in cooperation with our Department of Natural Resources, a survey form to send out to the companies to try to establish what is going on in the state.

We have looked at the generic cleanup plan proposed by Texas Eastern. It does not provide for drinking water protection. We have a revised statute in Louisiana, Revised Statute 30:1096, which prohibits the discharge of any hazardous materials into the groundwaters of the state. We advised Texas Eastern of that fact in our meeting on February 25 and noted that any cleanup of the sites in Louisiana would require some type of groundwater monitoring system.

Another issue is that a brief survey of some 22 States with legislation on PCBs indicated nine have provisions that go beyond TSCA. We are unaware if EPA or Texas Eastern are considering these facts in their remedial action.

In summary, although this has been a disconcerting incident, I think it has demonstrated that the cooperative agreement between Region VI and the state of Louisiana has allowed us to respond fairly quickly to this type of incident. Texas Eastern has been very cooperative in sharing information with us. In conclusion, we would like to express our appreciation to the committee for bringing this matter before the public.

Senator LAUTENBERG. Thank you, Dr. Brent.

Mr. Gaston, I wanted to review a couple of the things that you said to make sure that the record is clear on this. Your testimony brings home a very important problem. DEP was not informed about the New Jersey pits until well after EPA was informed.

As I heard you describe the law in New Jersey, Texas Eastern was required, under the law, to report to DEP as well as EPA, in this case. Is that true?

Mr. GASTON. Yes, sir, that is our position.

Senator LAUTENBERG. So then what you see here is a violation of the process if not of the law.

Mr. GASTON. We, of course, are instituting our own investigation with respect to the facts of the case and will be taking appropriate action as a result of our investigation.

Senator LAUTENBERG. But you are very clear about the New Jersey law promulgated in 1979?

Mr. GASTON. The New Jersey spill act says that if you have a discharge or a spill of hazardous substances—

Senator LAUTENBERG. That law was enacted in 1979?

Mr. GASTON. In 1979.

Senator LAUTENBERG. It requires the companies to notify DEP directly.

Mr. GASTON. That is right.

Senator LAUTENBERG. If there is any spill, discharge, and what else?

Mr. GASTON. It further, in 1979, was amended to become retroactive for spills or discharges that occurred before 1979.

Senator LAUTENBERG. Of materials that included, certainly, PCBs.

Mr. GASTON. Hazardous substances is the broadest definition that you can speak of, and that includes PCBs.

Senator LAUTENBERG. PCBs fit under that classification?

Mr. GASTON. Yes, sir.

Senator LAUTENBERG. Is there a process by which EPA, now putting aside the New Jersey law directly, is supposed to communicate with the DEP when a discharge of material like this takes place?

Mr. GASTON. The State and Region II EPA have a very excellent working relationship, and we share information on a very regular basis. As a matter of fact, because of the way in which we jointly manage our resources, we shove cases back and forth from one another to take best advantage of the kinds of resources that are available to solve problems. So we share information regularly and continually.

Senator LAUTENBERG. Why do you think, or can you account for the reason that your office was not notified before it hit the newspapers? Did you learn about this from the newspapers?

Mr. GASTON. I personally learned about it in the newspapers. Commissioner Dewling got a telephone call on a Saturday morning from Regional Administrator Daggett, notifying him, and both of us saw in print a letter from Mr. Homeyer on Monday morning, the 23d.

Senator LAUTENBERG. So even if you had neglected to read the newspapers, somebody would have heard about it, thank goodness. That is excellent.

Is it fair to say that had you learned of the problem earlier that you would have gotten involved with it at an earlier date in terms of testing?

Mr. GASTON. We would have responded as we did. We would look to to see whether or not there were any overriding public health issues; and if we identified public health issues that we could not answer, we would obviously have had to move forward to get further involved.

Senator LAUTENBERG. Would you have been satisfied with a report that said there should not be any health concerns there

without investigating further, based on the information that was released?

Mr. GASTON. One of the advantages of dealing in the State and with the State dealing with the local community and the county health department is that we have site-specific knowledge of what the issues are. So when we look at the information, because of the unique geology that exists in West Amwell, we said right away that a potential problem could arise as a consequence of PCBs traveling through the fractured rock. So we went right after that.

Senator LAUTENBERG. That concerned you.

Mr. GASTON. That is right.

Senator LAUTENBERG. You were not satisfied, I take it, that this stuff was contained very nicely and it could not present any problems. It would have caused you to go further in terms of an investigation.

Mr. GASTON. The investigation that had been done by Weston was a generalized investigation with some very limited site-specific information, enough information to raise questions about whether or not there was any offsite problems, which is the conclusion that we reached when we discussed the information and we saw the data and caused us to look to the first point where we could really see a serious problem, which is transmission of the PCBs through the groundwater of individual wells in the immediate vicinity of the site.

Senator LAUTENBERG. Let me ask you a question about the workers onsite. Is there a possibility that they have been exposed to PCBs? Do you have knowledge of that?

Mr. GASTON. I am afraid that I do not have knowledge of that issue, sir.

Senator LAUTENBERG. If you had been informed that PCB pits existed in the State at any location, do you think it is more urgent than 18 months to take a look at what is happening there?

Mr. GASTON. We certainly would have tried to act more rapidly than that. That is kind of a devilish question. With 1200 sites on our list, I am sure you could or anyone could pick two or three that you could say, didn't you get around to looking at them at an earlier point than you actually did. But certainly we would have made an effort to get at the problem sooner and, most particularly, to identify if there were any public health issues that ought to be attended to immediately.

Senator LAUTENBERG. Senator Breaux?

Senator BREAU. Thank you very much, Mr. Chairman.

I thank the panel members. I want to particularly welcome Dr. Brent and Martha Madden, who is our new secretary of the Department of Environmental Quality, who are here to help with this hearing today. You have come at a time when I know your travel budget is zero. You probably do not have one. So the fact that you are here, I think, is really very helpful, and the committee appreciates it very, very much.

It sounds like the phone lines between Washington and Louisiana were cut and that the mail was not working, because for you to find out about this in February 1987 from the news media is incredible. Is that really the first notification that DEQ in Louisiana

had that we had problems with PCBs being disposed of in the State?

Ms. MADDEN. That was the first official knowledge that I had in my Office of the Secretary.

Senator BREAU. We have a pit in Louisiana that Dr. Brent just described. It has 48,000 parts per million of PCBs with water on top of it?

Dr. BRENT. The concentrations are not that high in that area. That is a surface-level contamination at the Larose site. It is not under the three feet of water. It is on another area of the site, but that concentration is correct.

Senator BREAU. EPA knew that, the company knew that, and Louisiana's Department of Environmental Quality did not know that. What is the level that is acceptable, 50 parts per million?

Dr. BRENT. That is where the Federal law starts the regulation.

Senator BREAU. How much is at this site?

Dr. BRENT. It is 48,000, at least one sample that was identified by Weston.

Senator BREAU. That is the highest I have ever heard anywhere. Does it get worse than that?

Dr. BRENT. That is the highest that Weston has reported in the data they provided Texas Eastern for its surface samples.

Senator BREAU. Another site in Louisiana, at St. Francisville, has 3,800 parts per million?

Dr. BRENT. That is in the pit itself there.

Senator BREAU. And no one sent you a letter? No one wrote you a letter? No one picked up the phone? No one notified the State other than reading about it in the paper? Is that what you are saying?

Ms. MADDEN. That is when I officially learned about it in my immediate office from EPA or anyone.

Senator BREAU. We have 95 pipeline companies in Louisiana. We have a million miles of intrastate lines. The EPA said this morning that they studied it in 1981. I asked the question: could you give us any assurances that we do not have the same problem with intrastate lines? And the gentleman said no.

Does the State have the capacity to look at that? How many miles do we have in Louisiana of intrastate pipeline?

Dr. BRENT. I really do not know. Forty-three of those companies are being identified as being intrastate, so the number could be quite high.

Senator BREAU. Almost half of the companies are intrastate lines, and no one can tell us whether we have a problem with any of those lines.

Ms. MADDEN. That is the reason why, Senator, I asked the Governor if we could enter an interagency arrangement, working with the Louisiana Department of Natural Resources and the Office of Conservation, to assist us in looking at all of the data that these two agencies had outside of mine in conjunction with this effort.

Senator BREAU. Would that be on a reimbursed basis from EPA?

Ms. MADDEN. We certainly are in hopes. This is the effort that we have been trying to seek from EPA. To my knowledge, at this particular time, I do not have that in writing, though.

Senator BREAUX. I think, Mr. Chairman, again the point has been clearly made that EPA knew about this problem; they had entered into agreements with the companies. Yet the States that were affected were not notified. There has to be something wrong there from the standpoint of staying in touch with the State. If it is not in the regulations or the statute, it certainly should be in the policy.

For EPA to hide the information from the State that has the most serious problem is totally unacceptable. For the head of our department to read about it in the paper as the first notification is absolutely incredible. It is not the way they should be running the show.

The question is: why were they doing all the work with the company but not letting the State regulatory agency, that has an obligation to protect the health and safety of the people, know about it?

I think the testimony is well taken from both New Jersey and Louisiana. Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you very much, Senator Breaux, and thank you, panel, for supplying the information that you did. Again I have the reminder that if we have questions, we will be submitting them to you within a two-week period. You are obliged under oath to respond truthfully and promptly, if you will. Thank you very much.

Ms. MADDEN. Thank you, Senator.

Senator LAUTENBERG. I would like to call the fourth panel. That would be The Honorable Robert Fulper, Mayor of West Amwell, New Jersey; Elsa Byno-Andriolo, Steering Committee Member, New Jersey Environmental Federation; and Jacqueline Nelson, who occupies a position of great importance. She is a resident of West Amwell. Of course, Mayor, you are as well, not to deny that. We are anxious to hear what you say.

We would ask you to also submit to the oath. I would have you raise your right hands, please. Do you swear that the testimony you will give this morning is the truth, the whole truth, and nothing but the truth, so help you God?

[The panel, en masse. I do.]

Senator LAUTENBERG. Please take your seats. I will remind you that we have an allotment of about five minutes for summary comments that you have. Your full statements, if they are longer than that, will be accepted for the record. We look forward to hearing from you.

Mayor, would you like to go first in this panel?

STATEMENT OF HON. ROBERT FULPER, MAYOR, WEST AMWELL, NEW JERSEY

Mr. FULPER. Thank you so much for allowing me to testify here this morning. My name is Robert Fulper, and I am Mayor of West Amwell Township, New Jersey.

Before I begin, I think I will have a glass of water. I hope there are no PCBs in the water.

Senator LAUTENBERG. I do not think so.

Mr. FULPER. Mr. Chairman and members of the Senate Subcommittee on Superfund and Environmental Oversight, West Amwell Township is an agricultural-residential community of 2400 people governed by a three-person committee, of which I am the Mayor. There are approximately 850 homes which are almost all widely dispersed single-family residences. Every residence has its own individual well and septic system. Agricultural uses are primarily livestock, dairy, horse, woodland management and crop farming.

The township is comprised of 21.6 square miles of which 60.22 percent is farmland and farm residential, 13.96 percent is single-family residential, 11.45 percent is vacant land, 4.60 percent is public land including Lambertville Water Company watershed, 0.70 percent is multifamily dwellings of two or more families, 0.52 percent is commercial, and 0.18 percent is industrial and utility.

During the past year, the township has been faced with the possibility of a county landfill site, a proposed major quarry site which is now in litigation, three proposed major residential subdivisions which would more than double our entire population, and now we have PCB contamination within our community.

The alleged source of the PCB contamination is a gas pipeline transfer system owned by Texas Eastern. The company is located between State Highways 179 and 202 in Block 5, Lot 6 on the tax map and consists of an area of 29.11 acres. The pipelines from the plant extend for five linear miles through the township. The Texas Eastern plant is immediately surrounded by the village of Mt. Airy, two dairy farms, three large lakes, residences, cropland, two small farm and the Alexauken Creek. I would like to add that this is not a remote site, as far as I am concerned.

Texas Eastern has expanded their plant at various times since it was first installed during World War II. To my knowledge, they have always approached the township officials for necessary permits, and the township officials have always assisted them with the required information they needed to help expedite their plans. We thought we had a good working relationship with them, and we are keenly disappointed that we were not informed of this possible contamination.

West Amwell Township had no knowledge of the pit or dumping of PCBs until February 22, 1987 when the story came out in the press. Since then the following events have taken place.

February 28, 1987, the first sampling of wells was done on nine residential wells and the well on the Texas Eastern site. Also on February 28, we attended a press conference and site inspection set up by Senator Lautenberg and held at the Texas Eastern site.

March 5, 1987, the results of the five-out-of-nine residential wells were found to have an unacceptable level of PCBs. That evening a regular township committee meeting was held where a lengthy discussion of the situation took place. New Jersey DEP, Texas Eastern and county health officials were present.

March 6, 1987, the ten original wells were retested and samples were taken from 12 more wells.

March 7, 1987, bottled water was made available to all residents by the Texas Eastern company.

March 14, 1987, a water-testing program was set up by the county health department and run with the help of DEP, whereby

concerned residents could voluntarily have their water tested for PCBs for a \$75 fee. Initially, 50 residents took advantage of the testing on this date, and two additional dates were set for several residents who could not be accommodated by the lab facilities.

We have grave concerns as to what the extent of this problem might be for several reasons. Number one, the PCB pit is located next to a stream that flows directly into the Alexauken Creek, which flows into the Delaware Canal and the Delaware River.

There are three lakes located just north of the site, several residences around the site, large amounts of cropland, and farm animals from which there is the sale of milk and meat.

The soil in the area includes Brunswick shale, which creates a greater than normal potential for openings and fractures that allows water to run at a rapid rate in numerous unpredictable patterns.

We are concerned with what seems to be an unusually high rate of residents with cancer in the area surrounding the Texas Eastern plant. There is an attached map, and I think I counted 45 people that were affected with cancer in an area of a two-mile radius or a little more.

Senator LAUTENBERG. Is that a higher rate than in other parts of the township? The township is pretty big, geographically.

Mr. FULPER. If you look at the map, you can see the size.

Senator LAUTENBERG. It is as indicated by the Xs?

Mr. FULPER. That is right.

Number five, the possible impact on property values; and number six, an additional financial burden placed on township residents.

The reaction of the residents is anger, disappointment and disbelief that this situation has existed and been allowed to continue. This has caused a lot of anxiety which will probably continue to increase until everybody has a better understanding of the parameters of the contamination, the significance of the problem, especially as to the effects of PCBs, and more assurance of the ability of EPA, DEP and Texas Eastern to effectively deal with the situation and completely clean it up.

It is important to me, as Mayor, that our residents are informed and assured at all times that everyone is doing everything possible to correct this situation.

As United States citizens, we are all concerned with what we consider to be negligence on the part of EPA and Texas Eastern. As a small community, we have neither the resources nor the legal authority to effectively deal with this problem. Therefore, we must rely on the power vested in this committee to help remedy the situation.

Thank you very much.

Senator LAUTENBERG. Thank you very much, Mayor.

Now, I would ask Jacqueline Nelson, who lives nearby. As the mayor described, I think accurately, it is not remote to you, is it?

Ms. NELSON. No, not at all.

STATEMENT OF JACQUELINE NELSON, RESIDENT, WEST
AMWELL, NJ

Ms. NELSON. Thank you very much for this opportunity to testify. My name is Jackie Nelson. I am the principal of Nassau Christian School in Princeton, New Jersey. Since 1973 I and my family have lived on Queens Road in West Amwell, New Jersey. I am accompanied today by other residents of West Amwell, many of whom have lived in the community longer than I have. We are appearing here today because we are concerned about the PCB contamination that is occurring in the drinking water in our area.

Now, this report was done as of March 14, so I want to make that clear to you. I also would like to state at this point that of the cancer cases, I live 1,000 feet from the site and I am a cancer patient.

On February 22, 1987, an article appeared in the Trenton Times, Appendix A, saying that Senator Dale Bumpers had received information that Texas Eastern Transmission Corporation had been dumping PCB-contaminated liquids into 77 pits in the ground across the country. I live approximately 1,000 feet away from the West Amwell Compressor Station operated by Texas Eastern, the site of one of these pits, so naturally I became interested in this matter and began to inquire further.

During the next three or four days, I phoned many people trying to learn more about the problem. I found that my best sources of information were the aides to Congressman Florio and Senator Lautenberg, and I want to express my thanks to those individuals and to the Congressman and the Senator. The Hunterdon County Health Department, Mr. John Beckley, has been extremely helpful to us, and the New Jersey Department of Environmental Protection has also been helpful.

Now, there are several kinds of PCBs. Some kinds of PCBs are more toxic than other kinds. Even more important, commercial PCBs are ordinarily contaminated with other chemicals such as polychlorinated dibenzofuranes, PCDFs, and polychlorinated quarterphenyls, PCQs. These contaminants of PCBs are, in many cases, more toxic than the PCBs themselves.

I must note that in 1970, the U.S. Government banned PCBs from pesticides as scientific and medical evidence began to accumulate that PCBs could make animals and people sick. In 1976, the U.S. Congress passed a law forbidding the manufacture of PCBs, the only time in American history the Congress has banned a chemical in a law. The normal way for chemicals to be banned is for an executive agency, such as the EPA, to ban them.

In 1976, no one could possibly doubt any longer that PCBs were poisonous. By 1979, the 1976 law became completely effective. The PCBs were no longer permitted to be used. But there were old barrels of PCBs around, and some companies continued to use up their inventory rather than destroy it.

In 1981, Texas Eastern got word that PCBs had been measured in the natural gas they were delivering to homes in Long Island. Texas Eastern and the U.S. EPA and all state environmental protection agencies knew from this time onward that PCBs were a

problem associated with gas transmission lines and particularly with transmission lines operated by Texas Eastern.

I have learned that Texas Eastern notified the New Jersey Department of Environmental Protection about the problem on February 23 in 1987, and the company notified Congressmen and Senators on February 25. To this day, we, the affected citizens, have never been notified by the company.

When the Federal EPA, Environmental Protection Agency, the DEP and county officials met at that site, a Texas Eastern employee noted that a tank had been removed from the site and taken to be disposed of at Alabama and Illinois sites. Texas Eastern later admitted that the tank had contained PCB contaminants. They also stated that it was a government tank, and nothing else had been noted to us at that point.

Also, PCBs were apparently burned at this site. According to the Trenton Times article, there were two sites where this took place. David Sharp, a Lambertville resident, called Texas Eastern when Senator Lautenberg was to come meet with the residents. The employee referred to the West Amwell dump site two times as the old burn pit. Burning PCBs is even more serious than simple PCB contamination, as it results in dioxin.

By February 28, Senator Lautenberg visited West Amwell, and a week later the federal EPA took samples of water from nine family wells. Five days later, on March 5, we learned that five of the nine samples showed PCB contamination. My well is among the five that are known to be contaminated. Fifty-four sites were examined in a report from the Roy Weston Incorporated environmental consulting firm, a Texas Eastern-initiated report. Of the 54 sites, only eight were found to contain higher levels of contamination than those found in West Amwell.

Since then, additional sampling has been completed, and we just received that.

Therefore, what we know as of this date, preparation of this statement of March 14, is that our wells are contaminated. Now we do not know whether our wells are contaminated. We are on that see-saw, going up and down.

Please note that as a consequence of failures by Texas Eastern and the government agencies, people in West Amwell, whether or not we drank that water, we do not know.

Texas Eastern has stated that workers never had side effects when subjected to PCBs for long periods of time. It is very difficult to make exact comparisons between workers and the general public. The general public includes a much broader spectrum of human characteristics than the segment of the public that reports to work every day. The general public includes sick people, old people, schoolchildren, babies and so forth. They may be more affected by a chemical than workers are affected, because workers are generally in pretty good health, are in midlife and are often harder than the average population.

We are now forming a citizens' group so that we can respond to this situation in a coordinated fashion and so that we can all act in the best interests of ourselves and our community.

Senator LAUTENBERG. Would you just highlight those paragraphs without getting into the details?

Ms. NELSON. We want an evaluation. And as I heard today, I would like the information on why it was dribbling so slowly into the EPA. We want legislation to prevent something like this happening again. We also want an investigation, and one of the things I would like to see in the investigation is: why were the lines not shut down when the diffuser tanks were being put in? Why were they not shut down to protect us, because people come before situations.

What about the other companies that use that transmission company? Many of us have many more than one line coming across that use the transmission company.

An alternate water supply, if we need it, that is what we want. We definitely want health studies done. We want to know exactly; I outline that. And we would like compensation for our land values.

Senator LAUTENBERG. Thank you very much, Ms. Nelson.

Ms. NELSON. Excuse me. I have one other statement that I meant to make, and it is very important to me.

Senator LAUTENBERG. All right.

Ms. NELSON. It involves the DEP during the year of 1981. I have a hard time understanding this. We do not know why investigations were not carried out in 1981, but we know that a new law remedied this situation.

In 1981, three articles I picked up from the New York Times appeared. There is no way that I can honestly understand why the DEP of New Jersey at that time did not pick up the same articles. I can quote from one point of the article that states here: for the last month, PCB industrial chemicals linked to cancer have been turning up in the natural gas system of homes in Long Island; more PCBs were found in the gas lines of four utilities and in the New Jersey portion of the pipeline system that carries the gas from the Gulf states.

Now, you will have a copy of that article.

Senator LAUTENBERG. We have a copy, and it will be in the record. It is a very important article.

Ms. NELSON. I really want to know where the DEP was at that point, as well as the EPA.

Senator LAUTENBERG. It is very important and it is now in the public record. We will be making reference to that. We thank you.

Ms. Byno-Andriolo is someone whom I have worked with on other environmental matters. I am pleased to see you here, Esia, and invite you to make your testimony, again in summary form, if I may.

STATEMENT OF ESIA BYNO-ANDRIOLO, STEERING COMMITTEE MEMBER, NEW JERSEY ENVIRONMENTAL FEDERATION

Ms. BYNO-ANDRIOLO. Thank you. Members of the committee, ladies and gentlemen, thank you for this opportunity to present testimony today on this important matter. My name is Esia Byno-Andriolo, and I am a member of the steering committee of the New Jersey Environmental Federation, whom I am representing today.

I am also the chairperson of the Environmental Commission of Jersey City, New Jersey, where we are currently about to engage

in a massive fight to clean up enormous quantities of chromium wastes dumped at many locations throughout the city by careless corporations. I mention this situation in Jersey City to emphasize for you, and for the people of West Amwell, how important it is for citizens to get together to solve these pollution problems.

I first became involved with a major source of contamination in Jersey City several years ago. It was the PJP landfill, a 75-acre landfill in Jersey City, that had been on fire for more than 20 years. The sickly smoke from the landfill poured into the air of Jersey City year after year, and no government agency intervened.

The U.S. Environmental Protection Agency could not help us put out the fire nor could the New Jersey Department of Environmental Protection. Finally, a few citizens got together and formed the PJP Landfill Task Force, and we began to focus attention on that burning landfill. We began to publicize the problem: we wrote letters, we held rallies, we spoke to the press. And we got action.

With help from Senator Lautenberg and from other concerned individuals, we finally convinced the government agencies to spend \$18 million to hire a special fire-fighting team to come in and put out that fire. And today, the fire is out. It was a great victory for the people of Jersey City, and I want to thank Senator Lautenberg again for the role he played in that victory. But most important, I want to emphasize that it was the citizens getting together to solve a common problem that turned the tide.

The fight over the PJP landfill led the citizens of Jersey City to create an environmental commission, of which I am the chairperson. But now that the commission exists, we are looking at other dangers to the health of the people of Jersey City, which has led us to our present concern over chromium wastes dumped in the past.

My purpose in recounting that history is to emphasize how important it is for people to band together into an organization and fight for their right to a clean and healthful environment. We are here today to talk about a contamination situation in West Amwell, and I want the people of West Amwell to know that they are not alone in their fight for a clean, healthful environment.

All across New Jersey, people have been impacted by careless corporate dumping of toxics. That is why we have worked hard in recent years to create the New Jersey Environmental Federation: to make it easier for people to work together to solve their local problems. We share information.

The New Jersey Environmental Federation is a membership organization made up of groups and individuals focused on a broad spectrum of problems affecting the environment of New Jersey. We are an action-oriented organization working to improve environmental quality in New Jersey. Our work over the past two years has been focused on enforcing and strengthening the existing laws.

In this regard, we would like to offer again our thanks to Senator Lautenberg for his excellent record on environmental legislation, which makes him one of the outstanding leaders in the U.S. Senate. We are grateful to him.

The subject of this hearing is the community of West Amwell, where within the past three weeks it has been learned, or so we thought, that there was substantial contamination of groundwater. Just late last night I learned that the recent findings were not as

bad as we thought. However, I do not think this makes a difference in this hearing.

We read conflicting stories in the New York Times and in local papers, and we are not sure of the facts. But it appears true that one or more gas pipelines have been using PCB-contaminated lubricating oil in their compressor stations, particularly Texas Eastern Transmission Company.

We do not know the quantities of PCBs that have been dumped but we believe it has been substantial, because drinking water wells more than 1,000 feet from the pit have recently been discovered to be contaminated.

In a sense, this is just another typical pollution situation: a community going about its business is suddenly told that they are drinking water that fails to meet public health standards.

But this situation is somewhat different, because the federal and state agencies had a warning more than six years ago. Again, I have proof of it that in the New York Times of 1981, an article said that an Environmental Protection Agency regulation effective last May, which would be May of 1980, required all types of companies to stop using PCBs and that the New York area had yielded positive results and also the northern New Jersey part of the system.

So therefore, I found it hard to believe when both the New Jersey Department of Environmental Protection and the EPA state that they did not know about it. This is an article of 1981.

We do not want to debate the dangers of PCBs. We can see no justification whatever for the continued exposure of workers and community to PCBs. Attached to my testimony is a bibliography listing 113 studies that have shown PCBs to be toxic to humans, rats, mice, monkeys and other forms of life.

I do have some recommendations, but maybe they can be attached.

Senator LAUTENBERG. Thank you very much. We have the full statement, and that will go in the record along with the exhibits. I do not want to cut anybody off, because the subject is one of concern primarily at this moment to West Amwell but throughout the State and throughout the country, as you have heard from other witnesses.

The fact that a test result on the water quality turned out differently than was originally thought by no means obviates the fact that there is a terrible breakdown in the reporting cycle. Mayor, you know that. We all do now.

Newspapers should not be the source of this sensitive information. We have a mechanism that we constantly try to improve to move the process along. I and others here, as well as you, Mayor, and any community officials, are responsible to protect the health and well-being of our citizens, whether it is from military incursions or the environment. It does not matter.

The fact is it is on the high-priority list with certainly this Congress and with me and this committee. So we are going to continue to pursue it.

The testimony that we heard here today, in many cases, does not square from panel to panel: one group pointing a finger this way, another group pointing a finger that way. We intend to get to the bottom of this.

Your participation is critical. You citizens, whether from New Jersey, though I prefer New Jersey citizens, but wherever they come from, we want to hear from you, because you are the ones for whom this situation is not remote. It affects your family, your community.

I visited that town. I was so impressed. Even a little State like ours is hard to cover all the time. But it is not only a center for high quality people who care about their community, it is also a beautiful place to be. And we cannot casually dismiss the threat to property values.

You went in there in good faith. You put not only your money in but your souls, in many cases, and your lives. There is nothing casual about this matter.

So you have been of enormous help, as have the other panelists. Some of them may not quite enjoy the outcome, as others might. You might. And that is that we are going to have, a clean environment, if not in West Amwell immediately, through this country, and you will have played a role in that.

I thank you for being here. With that, we will adjourn this hearing of this subcommittee. Thank you very much.

[Whereupon, at 12:45 p.m., the subcommittee adjourned.]

[Statements and other material supplied for the record follow:]

TESTIMONY
PRESENTED BY TEXAS EASTERN GAS PIPELINE COMPANY
A DIVISION OF TEXAS EASTERN TRANSMISSION CORPORATION
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT
OF THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
THE HONORABLE FRANK LAUTENBERG OF NEW JERSEY, CHAIRMAN
MARCH 17, 1987

I. INTRODUCTION

Texas Eastern Gas Pipeline Company, a division of Texas Eastern Transmission Corporation, is engaged in the transportation and sale of natural gas to the Northeast and other areas of the United States. Texas Eastern Gas Pipeline Company (Texas Eastern) operates a 9,635 mile pipeline system extending from the Texas-Mexico border to the New York City area and employs approximately 1800 employees nationwide. Texas Eastern's facilities are located in the states of Alabama, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Texas, and West Virginia. Texas Eastern serves approximately 90 local distribution companies which supply natural gas to approximately fifteen million homes and businesses.

Within a week of the initial report in the press of the presence of polychlorinated biphenyls (PCBs) at Texas

Eastern's compressor station sites, Chairman Lautenberg personally met with the President of Texas Eastern and visited one of the Texas Eastern compressor stations. As Chairman of this Subcommittee, his concern and encouragement have promoted a beneficial working relationship between the State of New Jersey, United States Environmental Protection Agency ("EPA") Region II, local citizens, and representatives of Texas Eastern. This positive, problem-solving approach to remediation of the compressor station sites is necessary if all interested parties are to move forward expeditiously. By convening this hearing, Senator Lautenberg provides an appropriate forum for his colleagues, elected officials, and government agencies at all levels to pool information and expertise.

Texas Eastern is committed to the removal of PCBs from the company's natural gas pipeline system. Over the past ten years, Texas Eastern has spent in excess of \$20 million to address its PCB problems. Beginning in 1972, Texas Eastern implemented a program to remove PCB lubricating oil from twenty-four of its turbine/compressors; it later implemented an EPA-approved plan to reduce residual PCB contamination in its turbine/compressors; it then implemented an EPA-approved program to remove PCB liquids discovered in its pipeline system; and now it is focusing on

the presence of PCBs at its compressor station sites. Texas Eastern will continue to take whatever steps are necessary to deal with this pervasive problem. Texas Eastern repeatedly has stated its commitment to cooperate with EPA, the various states, and all other affected parties in order to achieve a satisfactory resolution of this difficult matter.

Texas Eastern appreciates the interest of this Subcommittee and the Congress in this matter and hopes that this interest will promote the cooperation among the affected states, the EPA regions, and EPA headquarters that is necessary for Texas Eastern to proceed expeditiously with its proposed remediation program.

II. COMPRESSOR STATION SITE REMEDIATION

In 1985, Texas Eastern retained the services of Roy F. Weston, Inc. ("Weston"), a national environmental engineering consulting firm, to investigate and define the presence of PCBs at Texas Eastern's pipeline compressor station sites and to develop comprehensive cleanup plans for all affected sites. To determine the extent of the problem, Weston and Texas Eastern initially focused on eight compressor station sites. These sites were selected as representative of the compressor station sites located along the entire gas pipeline system, based on operational and

geologic criteria. Weston then conducted a sampling and analysis program on these eight "pilot" sites, the results of which were presented in a report submitted to EPA in April 1986.

Using the information obtained in that program, Weston then developed plans for two additional studies. The first study was a more detailed follow-up of the sampling and analysis program initially conducted at the eight Texas Eastern compressor station pilot sites. The second study involved a screening program of sampling and analysis for the presence of PCBs at fifty-four other compressor station sites. A preliminary report summarizing the initial data from the screening study was prepared and submitted to EPA on December 15, 1986. Weston anticipates completing the final reports for both studies by March 20, 1987.

In conjunction with its ongoing studies, Weston prepared a generic cleanup plan that describes the proposed cleanup strategy for the compressor station sites. This plan was submitted to EPA for review and approval on December 15, 1986. Texas Eastern proposes to use this generic plan, after appropriate review, to develop site-specific cleanup plans for each of the compressor station sites requiring cleanup. The generic cleanup plan contemplates that Texas Eastern will excavate, sample,

analyze, and remove PCB-contaminated soil until the PCB concentration is reduced to an acceptable cleanup level. All removed soil then will be transported to an authorized disposal facility, unless an alternative treatment or disposal method is shown to be feasible and is approved by the appropriate regulatory agencies.

Cleanup will be most effective if conducted on a uniform and consistent basis. This approach will require cooperation among EPA headquarters, six EPA regions, and the affected states to avoid delays in initiating remediation efforts.

III. HISTORY

Starting in 1929, PCBs were used routinely in a wide variety of industrial applications, because of their fire-retardant, dielectric, and other desirable characteristics. In 1958, Texas Eastern began using PCB lubricating oil in its turbine/compressors to reduce the risk of fire. By 1970, Texas Eastern was using PCB lubricants in twenty-four pipeline turbine/compressors at nineteen pipeline compressor stations, located in nine states along Texas Eastern's pipelines.

In a letter dated January 27, 1972, Monsanto Industrial Chemicals Company, the manufacturer of PCB lubricating oil, notified Texas Eastern that it would not sell PCB lubricants

after June 1972 and advised "that PCBs tend to persist in the environment; that care is required in their handling, possession, use and disposition; that tolerance limits have been or are being established for PCB's in various food products." As a result of this notification, in early 1972 Texas Eastern began to phase out the use of PCB lubricants in its turbine/compressors.

In order that gas deliveries to millions of consumers would not be curtailed, Texas Eastern phased out its use of PCB lubricants during the periods that the turbine/compressors were taken out of service for maintenance. During servicing, the lubrication system was completely drained of PCB lubricant, the interior was swabbed to remove traces of the PCB lubricant, and the system was refilled with replacement oil containing no PCBs.

With the passage of the Toxic Substances Control Act (TSCA) in 1976, PCBs became subject to federal regulation for the first time. TSCA banned the manufacture, processing, distribution in commerce, and use of PCBs in all non-totally enclosed applications. Three years later, when EPA published its final rule banning virtually all uses of PCBs, it established several use authorizations, including a use authorization until May 1, 1980 for natural gas pipeline compressors. See 44 Fed. Reg. 31,551 (May 31, 1979).

Following the enactment of TSCA, Texas Eastern drained those turbine/compressors that still contained PCB lubricants. By 1977, all twenty-four Texas Eastern pipeline turbine/compressors that had contained PCB lubricating oil had been drained and the oil replaced with non-PCB lubricant. At these stations, the drained PCB lubricant was stored in drums pending EPA approval of a facility authorized to incinerate PCBs.

Although Texas Eastern had drained PCB lubricants from all of its turbine/compressors, because of its high specific gravity, the PCB lubricant could not be swabbed completely from the crevices in the interior of the turbine/compressors. Over time, this residual PCB lubricant would mix with and contaminate the non-PCB replacement oil. Often, Texas Eastern reduced the PCB concentration in the lubricant below the 50 parts per million (ppm) regulatory standard only to find later that the PCB concentration had increased above the 50 ppm level. Texas Eastern therefore initiated a regular program of lubricant monitoring and drainage. Texas Eastern drained some of its turbine/compressors five or six times in an effort to reduce the residual PCB concentrations below 50 ppm.

All of the drained oil continued to be stored at affected Texas Eastern compressor station sites because EPA

still had not yet approved an authorized facility for PCB incineration. At a number of its compressor station sites, Texas Eastern constructed storage warehouses for the sole purpose of housing the drums containing PCB lubricant, which continued to accumulate from the turbine/compressor drainage program. In March 1979, only seven of Texas Eastern's turbine/compressors showed PCB concentrations in excess of 50 ppm. In January 1980, despite a program of regular draining, PCB concentrations at a majority of the twenty-four turbine/compressors again had increased above 50 ppm.

In January 1981, while Texas Eastern's turbine/compressor lubricant drainage program was continuing, an incident in New York in which PCBs were detected in a residential meter prompted EPA to initiate an industry-wide survey of the nation's gas supply for the presence of PCBs. As a result of this survey, PCBs were not found in the gas but were discovered in liquids in the pipeline. These pipeline liquids are composed primarily of hydrocarbon distillates and condensates associated with the production and transmission of gas. Pipeline liquids enter the pipeline as liquids entrained in the gas stream. They also condense during thermal changes of the gas stream or at points of pressure reduction and collect at low points in

the pipeline. Regular liquid removal from the pipeline is necessary to reduce pressure loss in the pipeline and to prevent excessive liquid buildup that can result in severe pipeline operational problems.

The pipeline liquids in Texas Eastern's gas pipeline system apparently had become contaminated by PCB lubricating oil that had escaped past the seals of the turbine/compressors. The PCB lubricant that entered the pipeline mixed with the liquids already present in the pipeline. Apparently the more volatile pipeline liquids vaporized, recondensing elsewhere in the system, and the PCBs in the remaining liquids gradually concentrated. In addition, the "sweeping" motion of the gas in the pipeline tended to move the PCB-containing pipeline liquids in the direction of the gas flow.

The 1981 discovery of PCBs in gas distribution systems redirected EPA's attention to natural gas pipeline liquids. At this time, EPA inspectors visited a number of Texas Eastern compressor station sites to conduct sampling. In March 1981, Texas Eastern voluntarily sampled thirty-six locations along its pipelines for PCB-containing pipeline liquids and submitted a report of its results to EPA. Texas Eastern's report, submitted on March 25, 1981, and the reports of other pipeline companies which conducted similar

investigations assisted EPA in developing a model pipeline liquids remedial measures program. In late 1981, EPA approved Texas Eastern's proposed pipeline liquids removal plan and Texas Eastern began implementing methods to reduce the volume of PCB-containing liquids in its pipelines.

In January 1982, following discussions with EPA, Texas Eastern submitted a monitoring plan to EPA that contained a program of regular pipeline liquids sampling and analysis to determine the efficacy of Texas Eastern's liquid removal program. Under the monitoring plan, Texas Eastern submitted to EPA quarterly reports through 1982 and 1983, and later semiannual reports, concerning PCB concentrations found at various strategic points within its system, such as upstream and downstream of filter/separators, and at locations where gas is supplied to other transmission or distribution companies.

In accordance with the PCB liquid removal plan submitted by Texas Eastern and approved by EPA, Texas Eastern installed a total of ten mainline filter/separators at three of its compressor station sites and at one incoming line. These filter/separators strain out minute impurities from the gas stream and cause the vaporous hydrocarbon liquids to condense so that these substances can be removed from the pipeline. The filter/separator construction

program began in mid-1982 and was substantially completed by late 1982. The filter/separators have proved beneficial in drying the gas stream, thereby reducing the quantity of condensation in the pipeline.

In addition to its filter/separator construction program, Texas Eastern voluntarily installed dehydration and decanting equipment at its Grand Chenier, Louisiana compressor station, which is located near the origin of the offshore Louisiana portion of Texas Eastern's gas pipeline system. The purpose of this equipment is to reduce the volume of liquids entering the pipeline from offshore gas fields. Without such equipment, these liquids would migrate through the pipeline and become contaminated with PCBs. The dehydration equipment decreased the quantity of PCB liquids to be disposed of and decreased the likelihood that residual PCBs would spread further throughout the system.

In addition to reducing the quantity of liquids entering the pipeline or condensing inside the pipeline, Texas Eastern took additional steps to remove PCB-containing liquids already in the pipeline. Texas Eastern clears pipeline liquids from its system at periodic intervals, with "pigs" or scrapers, which are run through its system. When PCBs were discovered in the pipeline liquids, Texas Eastern increased the frequency of its pig runs. In addition,

pipelines that had not been pigged routinely in the past were pigged for PCB removal. To allow pigging of all portions of the pipeline, Texas Eastern installed pig launchers and receivers on all pipeline loops in order to permit pigging in areas that previously lacked facilities for internal cleaning. Texas Eastern continues all phases of its pipeline liquid sampling and removal program today and continues to report to EPA, now on a semiannual basis, the results of its pipeline liquid sampling and removal program.

While implementing its pipeline liquids remedial measures program, Texas Eastern continued to address the problem of PCB contamination in its turbine/compressor lubricating oil. In July 1981, Texas Eastern's sampling program showed that all twenty-four pipeline turbine/compressors contained PCB concentrations less than 50 ppm. By July 1982, however, the PCB concentrations at sixteen pipeline turbine/compressors again had risen above the 50 ppm level.

Despite Texas Eastern's continuing efforts to remedy the residual PCB contamination problem in its turbine/compressors, on July 23, 1982, EPA instituted an enforcement proceeding against the company pursuant to section 16 of TSCA (15 U.S.C. § 2615 (1982)), captioned "In

Re: Texas Eastern Transmission Corporation, Respondent,
Docket No. 82-H-01. The Complaint under which this proceeding was instituted charged that Texas Eastern was using PCBs in violation of applicable federal statutes and regulations.¹ EPA assessed a \$159,800 civil penalty against Texas Eastern, but the penalty was remitted under the terms of a Consent Agreement because of Texas Eastern's continuing good-faith efforts to decontaminate its turbine/compressors.

Included in EPA's Consent Order were the following findings of fact:

6. [Texas Eastern] has made good faith efforts to comply with the prohibition against use of PCBs in natural gas pipeline compressors. Even prior to enactment of TSCA, [Texas Eastern] in 1972, had commenced a program to phase out PCBs in its compressors. This program was accelerated in early 1976. [Texas Eastern] conducted decontamination procedures which included draining PCB liquids and refilling with non-PCB liquid. [Texas Eastern] participated in the EPA/natural gas industry sampling program to determine the extent and magnitude of its contamination problem.

Although the information [Texas Eastern] submitted to EPA--and upon which EPA relied in establishing its deadline--indicated the requisite PCB removal from compressors could be achieved by May 1, 1980, subsequent findings indicated that additional draining and refilling not contemplated by the

^{1/} 15 U.S.C. § 2614(1)(C); 40 C.F.R. § 761.20(a).

regulation was required. These findings were comparable to those relied upon by EPA in initially establishing a July 1, 1984 deadline for eliminating PCBs from heat transfer and hydraulic systems. See 40 C.F.R. § 761.31(d) and (e); May 31, 1979 Preamble, 44 Fed. Reg. 31, 534; and Support Document, p. 100. Although EPA believed the total cost for PCB removal for all pipeline compressors would be approximately \$200,000, Texas Eastern alone has expended to date over \$3,000,000 in clean-up costs.

7. [Texas Eastern] has at all relevant times acted in good faith and cooperated with EPA in attempts to gauge the extent of pipeline compressor contamination, and in implementing remedial measures.
8. [Texas Eastern] has voluntarily instituted remedial measures including testing, draining, and other decontamination measures to remove PCBs from its gas pipeline compressors, as set forth in the Consent Agreement and Compliance Schedule, signed on August 3, 1982, by both Complainant and [Texas Eastern].

The Consent Order included a Consent Agreement and compliance schedule that specified the actions to be taken by Texas Eastern to bring its natural gas pipeline turbine/compressors into compliance with the regulations. The final compliance target date was set for eighteen months from the date of the Consent Agreement, or February 3, 1984. A copy of the Consent Order and the Consent Agreement and compliance schedule is included as Appendix 1. On May 27, 1983, Texas Eastern filed with the EPA its final compliance report as required by the Consent Agreement and compliance

schedule.² Although not required under the Consent Agreement, Texas Eastern stated that it would continue to monitor these units to ensure continued compliance with the 50 ppm standard for PCB. Texas Eastern has continued its monitoring program and has maintained the PCB concentration of the turbine/compressor lubricants below 50 ppm since that time.³

Since its inception, the United States oil and gas industry, including the pipeline industry, has used earthen pits to contain liquids associated with the production and handling of oil and gas. Pits were used in the pipeline industry because the liquids which collect in the pipeline system are discharged from that system at high pressures that cannot safely or easily be contained in an ordinary

^{2/} See Letter of May 27, 1983 from F. L. Cohagan, Vice President of Texas Eastern Gas Pipeline Company to A. E. Conroy II, EPA Director of Pesticides and Toxic Substances Enforcement Division (included as Appendix 2).

^{3/} In a 1984 rulemaking proceeding, EPA proposed a new series of exemptions from the ban rule but omitted an exemption for natural gas pipelines, thus raising the possibility that Texas Eastern would be operating in compliance with the Consent Order but in violation of the PCB regulations. In response to Texas Eastern's comments, EPA amended the final rule to include an exemption for gas pipeline compressors and natural gas pipeline liquids containing less than 50 ppm PCBs. This exemption continues in effect today. See 40 C.F.R. § 761.30(i) (1986).

tank or other container. The liquids in the open pits evaporated or were burned.

In order to contain pipeline liquids more effectively, in 1958, Texas Eastern began installing liquid handling systems at some of its compressor station sites. By 1975 Texas Eastern had developed a design for and began installing diffuser tanks⁴ that could safely capture liquids and replace the earthen pits. The diffuser tanks permit liquids removed from the pipeline to be contained in a closed piping system during the discharge of high pressure gas, such as occurs at the end of a pig run. From the diffuser tank, the pipeline liquids can be drained directly into an adjacent accumulator tank, or in some instances, to a steel plate collection tank.

By 1981, when PCBs were discovered in pipeline liquids, Texas Eastern had installed diffuser tanks at thirteen of its pipeline compressor station sites, but earthen pits were still in service at the remaining compressor station sites. By 1984, an additional thirty-two diffuser tanks had been

^{4/} Also sometimes referred to as blowdown or knockout tanks.

installed, and diffuser tanks were in place at all affected Texas Eastern pipeline compressor station sites.

As the diffuser tanks were installed at each compressor station site, the pits were no longer required and they were taken out of service. Generally, the pits were backfilled by pushing in the earthen banks with a bulldozer after the water, if any, had been removed from beneath the oil layer. If the banks were inadequate to fill the pit completely, additional fill was brought in, usually from other parts of the compressor station site.

The three larger pits at the St. Francisville, Louisiana, Union Church, Mississippi, and Clinton, Mississippi compressor station sites were not closed until 1984. The oil on the surface of the pits at these locations was skimmed off, manifested, transported, and disposed of at a licensed disposal facility. The water layer remaining in the pit then was pumped repeatedly through a mobile filter unit, which contained sand and activated carbon filters, and which was designed to remove colloidal oil and organic contaminants, including PCBs. After this filtration process, the water was used for on-site irrigation of grass. Because the semi-solid material remaining in the bottom of the pits was of a consistency that could not be pumped or vacuumed, it was stabilized with fly ash. The stabilized

material was graded to a slightly higher elevation on one side of the pit in order to provide adequate drainage. It then was covered with an impermeable plastic liner and the pit was backfilled to above-ground elevations and sloped to prevent run-on and to minimize percolation. The sites were then seeded and marked so that they could be easily located when a final disposal alternative could be determined.

On December 3, 1984, EPA Region IX issued a Complaint naming Transwestern Pipeline Company ("Transwestern") as respondent. The Complaint cited Transwestern for storing and disposing of PCBs in a surface impoundment in violation of TSCA. Transwestern had been owned by Texas Eastern Transmission Corporation, and PCB lubricating oils had been used on the Transwestern system only at a single compressor station in a turbine/compressor, which replaced a reciprocating compressor unit destroyed by fire. The reports submitted by Texas Eastern to EPA under the pipeline liquid monitoring plan referred to above separately listed sampling and analysis results for the Texas Eastern and Transwestern pipeline systems. At the time that the Complaint was received, however, Texas Eastern had sold Transwestern.

Following the receipt of this Complaint, Texas Eastern began, in January 1985, systematically to gather information

regarding the use of earthen pits on the Texas Eastern system. The information gathered in this inquiry provided the basis for responses by Texas Eastern to requests for information made by EPA later in 1985 and in 1986.

On August 14, 1985, EPA issued Texas Eastern a Notice of Non-Compliance concerning tankage facilities at Texas Eastern's compressor station at Delmont, Pennsylvania. In its notice, EPA charged that the accumulator tank and the collection tanks, into which the separated liquids are drained, should be considered to be PCB storage tanks. EPA therefore asserted that the accumulator and collection tanks, unlike the pressurized portion of the pipeline system, were subject to the storage requirements of the applicable TSCA regulations.

On August 29, 1985, representatives of Texas Eastern met with EPA at headquarters in Washington to discuss the notice of non-compliance with EPA. At that meeting, Texas Eastern also discussed with the agency possible PCB contamination in earthen pits, which the diffuser tanks had replaced at Texas Eastern compressor station sites. Texas Eastern noted that the pits had been used to contain pipeline liquids drained from scrubbers or incoming pig runs, valve drainage, waste lubricating oil from compressor drips or seeps, and miscellaneous wastes associated with

station maintenance. Texas Eastern informed the Agency that the company planned to retain an environmental engineering firm to evaluate the closed pits and to decide what remediation steps should be taken. EPA requested that Texas Eastern provide available information concerning each of the pits.

On November 19, 1985, Texas Eastern submitted to EPA the requested information about the earthen pits. Included in that submittal was a list of pits associated with portions of the system subject to Texas Eastern's pipeline and compressor station PCB cleanup program, a list of pits associated with portions of the system that may have been exposed to PCB concentrations higher than the two ppm lower level of quantification but below 50 ppm, and a list of the pits associated with the remainder of its system. Also furnished to EPA was the then-currently available information relating to the location, size, predominant usage, current status, and closure date of each pit.

In the same letter, Texas Eastern also informed EPA that (1) all earthen pits had been backfilled by pushing in the dikes and adding new earth to prevent rainwater accumulation or percolation, the historical method for closing this type of pit; (2) observations of these closed earthen pits indicated that little percolation appeared to

be occurring; (3) Texas Eastern generally lacked data as to whether and to what extent PCBs may be present in closed pits because little sampling had been performed; (4) in order to obtain additional data, Texas Eastern had selected an environmental engineering consulting firm, Roy F. Weston, Inc. to develop and conduct a pilot sampling program to help determine the extent of PCB contamination, if any, in and around the pits; and (5) Texas Eastern would appreciate EPA's suggestions concerning the investigative program. Texas Eastern's November 19, 1985 letter is included as Appendix 3.

EPA responded to Texas Eastern on April 1, 1986, requesting that additional information be provided in response to twelve questions. Texas Eastern replied to that letter on April 25, 1986, answering each of the questions asked by EPA, and informing EPA that Weston had completed its pilot sampling program on April 21, 1986. Texas Eastern enclosed with that letter the Weston report entitled "Compressor Station Disposal Pit Investigation," which subsequently was referred to as the "Phase I: Eight Pilot Site Sampling Program." A copy of that report, which was sent to the EPA, is included as Appendix 4. This report for the first time provided information about the extent of PCB contamination at Texas Eastern's compressor station sites.

The initial sampling program conducted by Weston consisted of investigative activities for PCBs at the eight pilot station sites and included soil borings in the disposal pit areas and collection of surface soil, sediment, and surface water samples. Although groundwater was not sampled, Weston noted that groundwater was not encountered in any of the soil borings made during the pilot study program and the soil boring results indicated that PCBs did not appear to be migrating either vertically or horizontally from the pit areas. These observations were consistent with the known properties of PCBs to bind to the soil and to be virtually insoluble in water.

To reduce the potential for offsite migration of contaminated sediment, Texas Eastern initiated interim stabilization during April 1986. At compressor station sites which showed the presence of PCBs in surface drainage swales, silt fencing was installed to control the offsite migration of sediments containing PCBs.

Texas Eastern met with EPA on April 30, 1986, to discuss the status of its earthen pits investigation and future environmental cleanup actions. By letter of May 2, 1986, Texas Eastern confirmed the commitment it made at the April 30 meeting to continue its investigations and to

initiate a remediation program upon completion of the Weston studies. This letter is included as Appendix 5.

Based on the results of the Phase I pilot sampling program, additional programs were initiated by Texas Eastern through Weston in June 1986. These programs were described by Weston as follows:

Phase II: Eight Pilot Site Sampling Program

This program was designed to fill data gaps from the Phase I: Eight Pilot Site Sampling Program, including a further definition of the disposal pit sizes, identification of potential presence of the Hazardous Substance List ("HSL") compounds (a list of compounds provided in the USEPA Contract Laboratory Program protocols) in the pits, and a determination of the extent of PCBs in the disposal pits, soils, sediments, water, and sump/sump tanks.

Fifty-four Site Screening Program

This program was designed to provide screening information on the multimedia presence and extent of PCBs at fifty-four station sites in disposal pits, surface soils, sediments, water, and sump/sump tanks.

Preliminary Report, at pp. 1-2.

On July 25, 1986, Texas Eastern furnished to EPA additional information which EPA had requested concerning disposition of pipeline liquids at three different station sites. Texas Eastern also informed EPA that it had commissioned Weston to pursue additional investigative and remedial programs in June 1986.

At the request of Texas Eastern, on November 5, 1986, its counsel met with EPA to propose entry of a consent agreement that would specify remediation activities. In December 1986, following the conclusion of the field sampling work done by Weston for Texas Eastern, Weston prepared two reports: "Preliminary Report of Sampling Program at Texas Eastern Compressor Stations," which contains a summary of information to be included in the report of the Phase II pilot study and screening program, and a "Proposed Generic Clean-Up Plan for PCBs at Compressor Station Sites." A copy of the Preliminary Report of Sampling Program at Texas Eastern Compressor Stations is included as Appendix 6, and a copy of the Proposed Generic Cleanup Plan for PCBs at Compressor Station Sites is included as Appendix 7.

Weston's preliminary conclusions in the Preliminary Report of Sampling Program at Texas Eastern Compressor Stations are as follows:

The data from the multimedia investigation program are sufficient to characterize sites, prepare site-specific cleanup plans and initiate a cleanup program.

PCBs are the predominant contaminant at the compressor sites and will, therefore, be the controlling parameter for defining the cleanup efforts at these sites.

Surface soils and soils in disposal pits will be a major parameter in the cleanup program.

The HSL organics (excluding PCBs) were found at trace to low levels of the samples from the disposal pits at the eight pilot sites. The data revealed that HSL organics were not typically found in samples collected under the pit. The data indicate a negligible potential, if any, for vertical migration of these compounds from the disposal pits. The HSL organics will not be a parameter for consideration in the cleanup program.

Consistent elevated levels of inorganics were not found in the samples from the disposal pits, indicating that inorganics will not be a parameter for consideration in the cleanup program.

Impact on groundwater at the station sites is highly unlikely for the following reasons:

- PCBs have a high affinity for soils and are immobile in soils (except for surface transport).
- No organics were found in concentrations sufficient to act as a carrier medium for vertical migration of PCBs.
- HSL compounds (excluding PCBs), when detected, were found in trace to low concentrations in the disposal pits and were generally not detected below the pit.

Texas Eastern submitted to EPA on December 15, 1986, a package of information, including a system map showing locations of compressor stations, a history of PCBs in the Texas Eastern system, Weston's December 1986 preliminary report and generic cleanup plan, Texas Eastern's site stabilization and further source control program (included

as Appendix 8), and Texas Eastern's schedule for further source control and cleanup (included as Appendix 9).

Texas Eastern met on December 19, 1986 with EPA to discuss the matters referenced in its December 15, 1986 letter. At the December 19, 1986 meeting, EPA informed Texas Eastern that it was organizing a case management team and that it would seek to coordinate remediation oversight efforts among the EPA Regions and the affected states.

On January 17, 1987, Texas Eastern sent to EPA copies of Weston's January 16, 1987 report, entitled "Summary of Dioxin Sampling and Analysis." A copy of this report is included as Appendix 10.

EPA conducted a telephone conference with Texas Eastern on January 20, 1987 to pose EPA's initial technical questions concerning Weston's December 1986 preliminary report. During that conference call, several agreements were reached regarding Weston's final report of the sampling program at Texas Eastern compressor station sites. These agreements are set out in a February 4, 1987 letter to counsel for Texas Eastern from EPA, which is included as Appendix 11. In addition, EPA sent a letter to Texas Eastern dated February 17, 1987 requesting responses to seven specific inquiries concerning the compressor station sites. This letter is included as Appendix 12. Texas

Eastern submitted the requested information to EPA on March 10, 1987. Texas Eastern's submittal, except for United States Geologic Survey quadrangle maps, is included as Appendix 13.

To date, Texas Eastern has spent in excess of \$20,000,000 addressing its PCB contamination program. This figure includes \$3,250,000 (through December 1982) for replacing PCB lubricants and PCB-contaminated replacement oil in the turbine/compressors, \$4,700,000 for disposal of contaminated turbine/compressor lubricant and more than 500,000 gallons of contaminated pipeline condensate removed from Texas Eastern's system, \$6,350,000 for installation of filter separators, \$3,020,000 for installation of diffuser tanks, \$510,000 for installation of looped pipeline pig facilities, \$300,000 for stabilization activities at the St. Francisville, Union Church, and Clinton compressor station sites, and \$2,400,000 for remediation investigation studies. Not included in this sum is the \$7,000,000 spent to construct and modify the dehydrator station at Grand Chenier, Louisiana. The Grand Chenier project provided benefits in addition to those associated with the PCB decontamination program, but at least a portion of the \$7,000,000 cost may be attributed to the PCB program.

IV. RESPONSE TO PUBLIC CONCERN

Texas Eastern's pipeline compressor stations generally are located in remote locations. Each former pit site at all compressor station sites is completely fenced. PCBs bind tightly to soil particles and are virtually insoluble in water. At compressor stations sites where potential for offsite surface migration has been identified as a possibility, Texas Eastern has erected silt fences to control the offsite migration of PCB-containing sediments.

The recent publicity associated with this problem has created concern in affected states and their residents. Texas Eastern has intensively focused all of its resources on responding to those concerns. In public meetings and in meetings with officials from states through which its system passes, Texas Eastern has reaffirmed its commitment to remediate and manage these sites consistent with the protection of public health and the environment. Texas Eastern is working with individual states, as it has been working with EPA, to address this problem.

The day following the initial publicity, Texas Eastern, in a letter delivered by courier, notified each affected state that it had been working with EPA to effect remediation of the compressor station sites and offered to meet with each state and provide additional information.

Texas Eastern within several days had provided the states with copies of reports and maps identifying the locations of the compressor station sites.

Within the first week after the initial publicity, Texas Eastern had met with governmental representatives of Louisiana, Pennsylvania, New Jersey, and Arkansas. The following week, Texas Eastern met with representatives of Mississippi, Kentucky, and again with representatives of Arkansas and New Jersey. Since then, Texas Eastern has met with representatives of each state requesting a meeting and has participated in a number of local meetings.

Additionally, Texas Eastern has accommodated numerous visits by federal and state inspection teams and has responded to many requests for information.

V. CONCLUSION

For more than ten years, Texas Eastern has worked diligently and steadily to remove the PCBs from its pipeline system. The scope of Texas Eastern's efforts has continued to expand -- from the turbine/compressors, to the pipeline, to the compressor station sites. Texas Eastern has attempted to address this problem in a comprehensive and logical manner and to deal with the operational and technical obstacles with which it is faced. Texas Eastern remains committed to working with EPA and the states in

solving its PCB problem. Texas Eastern has made substantial progress in reducing the concentrations of PCBs in its pipelines and turbine/compressors to the authorized levels. The remediation program for its compressor station sites represents an important part of Texas Eastern's overall program to rid its system of PCBs. Texas Eastern will implement the remaining remediation measures at its pipeline compressor station sites as soon as an acceptable remediation program is approved.

**TEXAS **
EASTERN
Gas Pipeline Company

A DIVISION OF TEXAS EASTERN TRANSMISSION CORPORATION

HOWARD C. HOMEYER
 PRESIDENT

April 28, 1987

Honorable Frank R. Lautenberg
 Chairman
 Subcommittee on Superfund and Environmental Oversight
 Committee on Environment and Public Works
 Washington, D.C. 20510-6175

Dear Chairman Lautenberg:

This letter is in response to your request of March 25, 1987 for additional information on Texas Eastern's Gas Pipeline Company's use of earthen pits for disposal of pipeline condensate. Responses are based on the best information currently available to Texas Eastern.

Texas Eastern appreciates the opportunity to comment for the record and hopes that the information provided will assist the Subcommittee in dealing with this complex issue.

1. You report that the pit at a Joaquin, Texas compressor station was in use until October 1981. You also report that condensate samples taken at this same compressor station contained in excess of 50 ppm PCB. Did you dispose of the Joaquin, Texas condensate at the pits at the Joaquin compressor site?

Condensate was placed in the pit at the Joaquin compressor site until 1981 as indicated in Attachment D to our letter to EPA dated April 25, 1986.

2. Based on any monitoring which Texas Eastern has done on its pipeline, which portion of the pipeline do you consider contaminated with PCBs?

A simplified system map is attached, Attachment 1, which shows the pipeline segments where analyses of pipeline condensate indicate PCB concentrations frequently in excess of 50 ppm. Condensate obtained from other portions of the pipeline system also contain PCBs, but at concentrations consistently measuring less than 50 ppm. Also indicated on the attached map are those stations where Turbinol lubricant was used in the natural gas compressors.

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3. In Attachment D of your letter to EPA dated April 25, 1986 it is reported that two of Texas Eastern's compressor sites had pits in use until sometime in 1984. What levels of PCB were found in the condensate samples at those two sites?

Attachment D indicates ten locations with pits still in use in 1984. They were:

<u>Station</u>	<u>PCB in Condensate***** (Date of Sample)</u>	<u>PCB in**** Soil Borings</u>
Station 16 (Lebanon), OH	3 ppm (12-23-86)	0.14 ppm
Station 01 (Longview), TX	5 ppm (02-03-87)	1.15 ppm
Station 04 (Donaldson), AR	5 ppm (5-9-83)*	5.7 ppm
Charco, TX	Less than 2 ppm (11-19-85)	No Borings
Thomaston, TX	No samples taken***	No Borings
Vidor, TX	Less than 2 ppm (10-31-84)	None Detected
Iowa Plant, LA	3 ppm** (06-11-81)	No Borings
New Roads, LA	101 ppm (12-30-83)*	7.6 ppm
Monroe, LA	Less than 2 ppm (01-23-86)	No Borings
Accident, MD	Less than 2 ppm (03-24-87)	No Borings

* These results are believed to be representative of the PCB concentrations found in pipeline condensate on these portions of the pipeline system. Two samples taken within the last year showed 55 ppm and 2,619 ppm PCB at Donaldson and New Roads, respectively. These samples, however, come from pipeline liquids stored for long periods in a tank and a drum, respectively, and each is suspected of having unrepresentatively high levels of PCBs due to evaporation of the hydrocarbon fraction of the liquid that was sampled. Neither the contents of the tank nor the drum were disposed of in a pit; the contents of each was incinerated at an EPA-approved disposal facility.

** This sample was taken from valve drainage and comes from a portion of the pipeline system where PCBs were not used in the compressors. Its validity is unknown.

*** This station is located on a portion of the pipeline system where no PCBs have been found.

**** Maximum concentrations of PCBs in soil borings at known pit locations as reported in March 1987 Weston report.

*****The PCB concentrations reported were obtained from samples of condensate removed from the pipeline at the locations shown. They are believed to be representative of the PCB concentrations in condensate placed in the pits at the stations.

Since April 1986, two additional locations have been identified with pits still in use in 1984. They are Petronilla, Texas and Tivoli, Texas. No samples from these two sites were taken because PCBs never were used in compressors on this part of the pipeline system and there is no reason to believe that PCBs might be present.

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4. Describe the scope and extent of Texas Eastern's sampling above and beyond Texas Eastern's monitoring for EPA.

In addition to sampling for PCBs performed under Texas Eastern's Monitoring Agreement and Consent Agreement of 1981 with EPA, certain other sampling and testing is routinely conducted:

Since 1981, where PCBs might be present in waste bound for disposal, a PCB analysis has been conducted.

When hydrostatic testing is conducted on old or new pipe, a water sample is taken before and after the water is used in testing. In addition to testing for any parameters listed in the agency discharge permits, PCBs are analyzed for instances where they potentially can be present in the hydrostatic test water.

The recent program of environmental sampling performed by Roy F. Weston, Inc. was initiated by Texas Eastern because of the possibility that PCBs were disposed of at its compressor stations. Full details on the scope and results of that program have previously been communicated in the form of Weston's final reports.

5. In Texas Eastern's written testimony, it is stated that the use of pits was normal pipeline practice. They were used in the industry, according to your statement (pp. 15-16), "because the liquids which collect in the pipeline system are discharged from that system at high pressures that cannot safely or easily be contained in an ordinary tank or container."

EPA staff, however, indicate that they were unaware of the existence of such pits in the Texas Eastern system. EPA inspectors are said to have collected samples from valve bodies into metal and glass containers without problems such as the widespread spraying of liquids.

Since your statement seems to imply that a reasonable person would understand that pits were utilized until diffuser tanks were installed. Please explain how Texas Eastern reconciles this with the following statement contained in an August 20, [1981] letter from Texas Eastern to EPA:

PCB contaminated materials are collected in tanks or drums and held for disposal at EPA approved incinerators or landfills, or by other methods of disposal approved by EPA.

Pipeline liquids routinely are removed from a number of locations along the pipeline system. One type of location from which liquids are removed is the cavity at the bottom of a gate valve. Because of the design of most gate valves on the Texas Eastern system, accumulated pipeline liquids at the bottom of the valve cavity can be drained safely by throttling a small drain cock, allowing the liquids to be forced through a small riser pipe by the gas pressure in the pipeline. Texas Eastern routinely drains all valves on its system, but only a small amount of pipeline liquids is present in and thus collected from valve bodies.

The great majority of pipeline liquids that are removed from Texas Eastern's pipeline system came from "scrubbers" or "strainers" located at the compressor stations. These pieces of equipment are large pressure vessels designed to "knock-out" or remove free liquids from the gas stream before the gas stream enters the compressors. The majority of pipeline liquids that are "pushed" into the compressor stations by cleaning pigs also are collected in the scrubbers or strainers. Because of the relatively large volumes of pipeline liquid collected by scrubbers and strainers, and because these volumes collect in high pressure vessels, these liquids cannot be drained safely into a tank, drum, or similar container. Therefore pits were used by Texas Eastern to contain the pipeline liquids collected in scrubbers and strainers.

In 1975, Texas Eastern developed a standardized design for a "diffuser" tank which could safely capture the discharged pipeline liquids. Texas Eastern installed the first of these diffuser tanks in 1975 and accelerated its installation program in 1981. The statement quoted in the August 20, 1981 letter to EPA correctly describes the procedures that were employed at Texas Eastern compressor stations at which diffuser tanks were installed.

6. The practice of burning PCB-contaminated condensates and other materials in pits was briefly touched on at the hearing. Please provide specific information pertaining to all of the locations where such burning was done. How frequently were such materials burned? List all of the types of materials which were burned. Is Texas Eastern Gas Pipeline Company presently burning materials which are in pits? For each location listed where the burning of materials in pits has occurred, list the time frames during which burning occurred (e.g., June 1981 thru June 1984).

Based on the best information available, it is believed that burning of condensate in pits took place at the locations and during the time periods shown on Attachment 2.

Typically, burning of liquids in pits was done to reduce liquid volume. This was usually necessary only several times per year and was dependent on liquid volumes received.

Texas Eastern believes that the only materials disposed of or burned in earthen pits were pipeline condensates and waste oil from compressor drips, and small amounts of miscellaneous maintenance-related wastes.

There are no pits containing PCBs on Texas Eastern's system known to remain open, and therefore no burning of PCBs takes place in such pits. With the exception noted below, no intentional burning of any materials in pits now takes place at Texas Eastern stations.

Texas Eastern routinely conducts fire safety training for its employees and condensate fires are simulated using various combustible liquids. After proper notifications and permits are completed, diesel (or a similar combustible liquid obtained for the exercise) is placed in a reservoir, ignited, and extinguished for training purposes.

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7. Has your consultant tested soil samples for dioxins and dibenzofurans? If so, what are the findings?

Sampling for dioxins and dibenzofurans was conducted by Roy F. Weston, Inc. for Texas Eastern as part of the Phase 2: 8 Pilot Site Program. A complete discussion of the dioxin and dibenzofuran sampling and results is included in the final report entitled "Results of the Supplementary 8 Pilot Site Compressor Station Investigation Program", which was provided in the materials submitted by Texas Eastern at the March 17, 1987 hearing.

8. Which Texas Eastern Gas Pipeline Company official was responsible for implementing the PCB-contaminated condensate remediation program first undertaken with EPA in 1981/1982?

F. L. Cohagan (retired)
Vice President, Operations
Texas Eastern Gas Pipeline Company

9. Did Texas Eastern Gas Pipeline Company have an environmental auditing/monitoring program? If so, how could these pits have been contaminated with PCB-laden liquids?

Texas Eastern Gas Pipeline Company did not have an environmental auditing/monitoring program. Texas Eastern Transmission Corporation initiated an assessment (audit) program in 1984, which involved inspections of some Texas Eastern facilities. The practice of using the pits to contain pipeline condensate had been discontinued and backfilling and revegetation had been completed at audited facilities prior to the implementation of the 1984 corporate assessment program.

10. In your oral testimony, Mr. Church stated that Texas Eastern used PCB-contaminated lubricating oil through 1977, five years after Monsanto ceased its manufacture. Texas Eastern's testimony also indicated that it was aware of the risks of PCBs in the early 1970's. Why, then, did your company use PCB-laden oils for five years after its production was discontinued?

Attachment 3 is a copy of the initial letter from Monsanto identifying the problems associated with PCBs. Your attention is directed to the relevant portion of the document:

"While Buyer desires to purchase Turbinol 153 because of its outstanding fire resistant properties, Buyer acknowledges that it is aware and has been advised by Monsanto that Turbinol 153 contains PCB's and that PCB's tend to persist in the environment; that care is required in their handling, possession, use and disposition; that tolerance limits have been or are being established for PCBs in various food products."

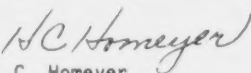
Page 6

From the language in the correspondence, it is believed that the response from Texas Eastern at the time was both reasonable and appropriate. There are many compounds in common use today with similar cautions. The caution urging care in handling and directing attention to acceptable levels in foods could just as easily be applied to gasoline. When the Congress elected to regulate PCBs in 1976 with the passage of the Toxic Substances Control Act (TSCA), Texas Eastern's Turbinol phase-out program was near completion. Texas Eastern completed its Turbinol phase-out program in 1977, one year before EPA promulgated regulations to control the use, handling and disposal of PCBs.

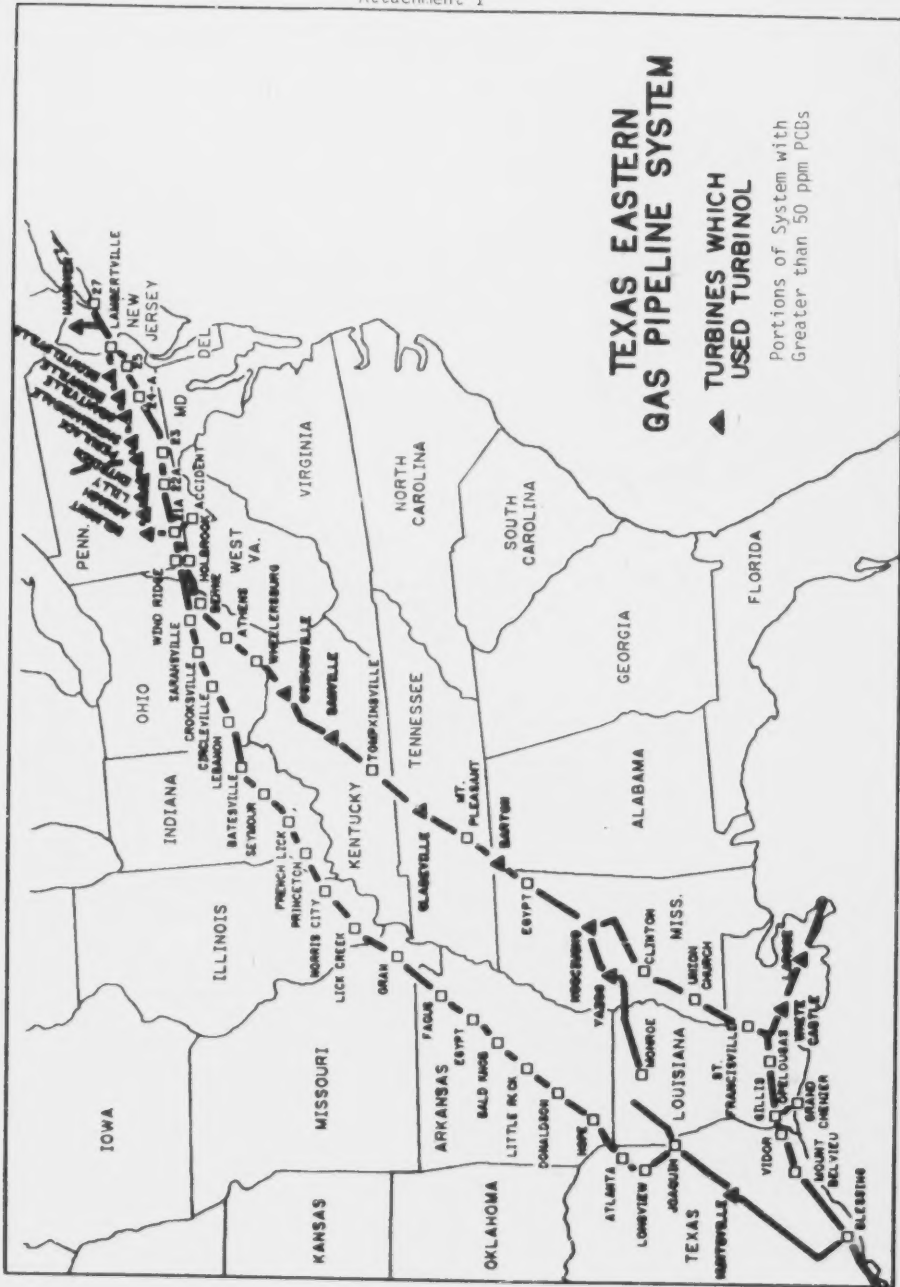
It is our understanding that many industries such as electric utilities continue to use PCBs even today. In a 1983 article in Environmental Science and Technology, it was estimated that 750 million pounds of PCBs are still in use in the United States.

If there are any questions concerning our responses to these requests, I will be happy to provide additional information.

Sincerely,


H. C. Homeyer

mkb



Attachment 2

The following list contains the best information currently available about burning of materials in pits at Texas Eastern compressor stations. This information has been gathered largely through employee interviews, and its accuracy is uncertain. Texas Eastern has not been able to locate records regarding the precise dates of burning or the quantity of material burned. The material that was burned was the material in the pits, which is believed to have consisted of pipeline condensate, waste oil from compressor drips, and miscellaneous maintenance-related wastes.

<u>State-Station</u>	<u>Station Name</u>	<u>Dates of Burning</u>
AL-BAR	Barton	1952 to 1968
AR-03	Hope	1951 to 1972
AR-04	Donaldson	1948 to 1977
AR-06	Bald Knob	1963 to 1975
AR-07	Egypt (Walnut Ridge)	1948 to 1974
IL-11	Norris City	Pre-1947 to 1975
IN-12	Princeton (Oakland City)	Pre-1948 to 1963
IN-13	French Lick	Pre-1951 to 1973
IN-14	Seymour	1952 to 1973
IN-15	Batesville (Oldenburg)	Pre-1947 to 1972
KY-DAN	Danville	1952 to 1969
KY-OWI	Owingsville	1958 to 1975
KY-TOM	Tompkinsville	1956 to 1980
LA-111	M.P. 281.61, 24" Line 11	1958 to 1965
LA-GIL	Gillis	1957 to 1966
LA-IOP	Iowa Plant	1970 to 1976
LA-LAR	LaRose	Burned only once, January 10, 1966.
LA-MON	Monroe	1961 to 1974
LA-NEW	New Roads Junction and Lab	1966 to 1970 One accidental burning January 1984.
LA-OPE	Opelousas	1956 to 1975

<u>State-Station</u>	<u>Station Name</u>	<u>Dates of Burning</u>
LA-STF	St. Francisville	1957 to 1975
MD-ACC	Accident Field	1966 to 1976
MO-OG	Oran	1947 to 1974
MS-CLI	Clinton	1957 to 1969
MS-KOS	Kosciusko	1952 to 1973
MS-UNI	Union Church	1956 to 1968
NJ-26	Lambertville	1966 to 1972
OH-16	Lebanon	Pre-1948 to 1975
OH-17	Circleville (Five Points)	1948 to 1972
OH-18	Crooksville (Somerset)	1957 to 1975
OH-19	Sarahsville (Summerfield)	Pre-1955 to 1967
OH-ATH	Athens	1956 to 1975
OH-BER	Berne	1952 to 1970
OH-WHE	Wheelersburg	1952 to 1965
PA-21A	Connellsville (Uniontown)	1952 to 1977
PA-22A	Bedford	1952 to 1970
PA-24A	Marietta	1952 to 1977
PA-ARM	Armagh	1958 to 1975
PA-BEC	Bechtelsville	1957 to 1967
PA-DEL	Delmont	1954 to 1962
PA-GRA	Grantville	1955 to 1977
PA-HOL	Holbrook (Ryerson)	1955 to 1974
PA-LIL	Lilly	1957 to 1977
TN-GLA	Gladeville	1952 to 1977
TN-MTP	Mt. Pleasant	1956 to 1978
TX-02	Atlanta	1948 to 1972

<u>State-Station</u>	<u>Station Name</u>	<u>Dates of Burning</u>
TX-BLE	Blessing	1965 to 1970 Liquids burned in pit only in emergency or accidental ignition.
TX-B00	Booth	1956 to 1975
TX-CHA	Charco	1956 to 1975
TX-JOA	Joaquin	1954 to 1972
TX-MTB	Mt. Belvieu	1957 to 1967
TX-VID	Vidor	1956 to 1975

Attachment 3

Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
800 N. Lindbergh Boulevard
St. Louis, Missouri 63166
Phone: (314) 874-1000

SPECIAL UNDERTAKING BY PURCHASERS OF LUBRICANTS CONTAINING POLYCHLORINATED BIPHENYLS

Monsanto Company ("Monsanto") manufactures a fire resistant turbine lubricant, Turbinol 153, which contains major amounts of certain polychlorinated biphenyl products ("PCB's"), which Texas Eastern Transmission Corporation ("Buyer") desires to purchase. While Buyer desires to purchase Turbinol 153 because of its outstanding fire resistant properties, Buyer acknowledges that it is aware and has been advised by Monsanto that Turbinol 153 contains PCB's and that PCB's tend to persist in the environment; that care is required in their handling, possession, use and disposition; that tolerance limits have been or are being established for PCB's in various food products.

Monsanto has therefore adopted certain restrictive policies with respect to its further production, sale and delivery of PCB's and PCB containing formulations, including the receipt of undertakings from its customers as set forth below, and Buyer is willing to agree to such undertakings with respect to sales and/or deliveries of Turbinol 153 by Monsanto to Buyer.

Accordingly, Buyer hereby covenants and agrees that, with respect to any and all Turbinol 153 sold or delivered by or on behalf of Monsanto to Buyer on or after January 15, 1972 and in consideration of any such sale or delivery, Buyer shall defend, indemnify and hold harmless Monsanto, its present, past and future directors, officers, employees and agents, from and against any and all liabilities, claims, damages, penalties, actions, suits, losses, costs and expenses arising out of or in connection with the receipt, purchase, possession, handling, use, sale or disposition of Turbinol 153 by, through or under Buyer.

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whether alone or in combination with other substances, including, without implied limitation, any contamination of or adverse effect on humans, marine and wildlife, food, animal feed or the environment by reason of such Turbinol 153 or the PCB's contained therein.

Monsanto will not supply any Turbinol 153 after June 30, 1972. All existing contracts for the sale of Turbinol 153 by Monsanto to Buyer are hereby amended to contain the provisions set forth above.

Nothing herein shall create or imply any duty or obligation of Monsanto to sell or deliver Turbinol 153 or any PCB containing formulation to Buyer. No conditions, understandings or agreements purporting to modify or vary the terms hereof shall be binding unless hereafter made in writing specifically referring to this agreement and signed by the party to be bound and no modification or variance of the above undertaking shall be effected by the acknowledgment or acceptance of any sale document, purchase order, shipping instruction or other forms containing terms or conditions at variance herewith.

TEXAS EASTERN TRANSMISSION CORPORATION

MONSANTO COMPANY

BY: _____

BY: _____

TITLE: _____

DATE: _____

STATEMENT OF
THOMAS L. ADAMS, JR.
ASSISTANT ADMINISTRATOR
OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
MARCH 17, 1987

My name is Thomas L. Adams, Jr. I am the Assistant Administrator for Enforcement and Compliance Monitoring of the United States Environmental Protection Agency. After a hearing before this committee, I was confirmed by the U.S. Senate on August 9, 1986.

Today I would like to bring you up to date on issues involving the Texas Eastern Gas Pipeline Company and other companies with similar environmental problems. The Agency appreciates this opportunity to speak to the subcommittee on our ongoing efforts to address the potential environmental problems which have resulted from the use of disposal pits by various natural gas pipeline companies and in particular on our efforts regarding Texas Eastern. I have with me here today Agency experts on the legal and technical aspects of these issues.

In 1976, Congress enacted the Toxic Substances Control Act (TSCA) regulating, among other things, polychlorinated biphenyls (PCBs). Pursuant to the mandate of TSCA, the Agency published regulations controlling the marking, use, processing, distribution and disposal of PCBs in February 1978 and May 1979. These regulations have been amended several times since 1979.

PCBs IN A NATURAL GAS PIPELINE WERE FIRST DISCOVERED OVER SIX YEARS AGO, IN JANUARY 1981, BY THE LONG ISLAND LIGHTING COMPANY OF NEW YORK WHILE INVESTIGATING A CLOGGED GAS METER. IN RESPONSE TO THIS SITUATION, EPA, IN COORDINATION WITH STATE AGENCIES AND NATURAL GAS PIPELINE COMPANIES, INITIATED A NATIONAL PROGRAM TO DETERMINE THE SCOPE AND EXTENT OF POSSIBLE PIPELINE PCB CONTAMINATION. UNDER THIS PROGRAM, EPA HEADQUARTERS WORKED WITH INTERSTATE TRANSMISSION COMPANIES AND EPA REGIONS AND INTERESTED STATES WORKED WITH LOCAL UTILITIES. BEGUN IN FEBRUARY 1981, THE PROGRAM INVOLVED THE COLLECTION AND ANALYSIS OF THOUSANDS OF PIPELINE LIQUID SAMPLES AND HUNDREDS OF COMPRESSOR LUBRICATION OIL SAMPLES.

IT SHOULD BE POINTED OUT THAT THERE ARE APPROXIMATELY 270,000 MILES OF INTERSTATE TRANSMISSION LINES AND OVER 1,000,000 MILES OF LOCAL DISTRIBUTION LINES IN THE NATIONAL GAS PIPELINE NETWORK. AS YOU SEE THE SCOPE OF THE SITUATION IS ENORMOUS.

THE NATIONAL SAMPLING PROGRAM IDENTIFIED 13 INTERSTATE GAS TRANSMISSION COMPANIES, LOCATED PRIMARILY IN THE SOUTH, NORTH-EAST AND MIDWEST U.S., WITH PCB CONTAMINATED PIPELINE CONDENSATES. TEXAS EASTERN WAS ONE OF THE INTERSTATE COMPANIES IDENTIFIED. ADDITIONALLY, STATES AND REGIONAL OFFICES IDENTIFIED PROBLEMS WITH A NUMBER OF LOCAL DISTRIBUTION COMPANIES IN CALIFORNIA, THE MIDWEST, AND THE NORTHEAST. POSSIBLE SOURCES OF PIPELINE PCB CONTAMINATION IDENTIFIED WERE USE OF PCB LUBRICANTS IN PIPELINE TURBINE COMPRESSORS, USE OF WASTE OIL TO 'FOG' DISTRIBUTION LINES, AND USE OF WASTE OIL IN PIPELINE SCRUBBING OPERATIONS.

IN MAY OF 1981, EPA INITIATED A REMEDIAL PROGRAM FOR COMPANIES WITH PCB CONTAMINATED LINES. AGAIN, UNDER THIS PROGRAM EPA HEADQUARTERS WORKED WITH INTERSTATE FIRMS WHILE REGIONS AND STATES WORKED WITH LOCAL UTILITIES. UNDER THE REMEDIAL PROGRAM COMPANIES AGREED TO HANDLE, STORE, AND DISPOSE OF PCBs REMOVED FROM THEIR SYSTEMS IN COMPLIANCE WITH THE PCB REGULATIONS. IN EARLY 1982, EPA AND COMPANIES WITH CONTAMINATED LINES INITIATED A PROGRAM REQUIRING THESE COMPANIES TO REGULARLY MONITOR THEIR PIPELINE SYSTEMS TO DETERMINE THE EFFECTIVENESS OF THEIR REMEDIAL PROGRAMS AND TO REPORT THIS INFORMATION TO EPA.

AS A RESULT OF EPA INSPECTIONS AND INFORMATION RECEIVED FROM THE COMPANY, EPA DISCOVERED THAT TEXAS EASTERN GAS PIPELINE COMPRESSORS LUBRICATING OIL CONTAINED PCBs IN EXCESS OF 50 PPM, A VIOLATION OF EPA REGULATIONS. ON JUNE 23, 1982, EPA ISSUED A CIVIL ADMINISTRATIVE COMPLAINT AGAINST TEXAS EASTERN FOR THESE VIOLATIONS. ON AUGUST 3, 1982, EPA ENTERED A CONSENT AGREEMENT AND FINAL ORDER WITH TEXAS EASTERN, SETTLING THE COMPLAINT, REQUIRING DECONTAMINATION OF ALL PIPELINE COMPRESSORS IN THE TEXAS EASTERN PIPELINE SYSTEM. TEXAS EASTERN COMPLETED DECONTAMINATION EFFORTS IN COMPLIANCE WITH THE ORDER.

ON NOVEMBER 29, 1984, AS A RESULT OF AN EPA INSPECTION, OUR SAN FRANCISCO REGIONAL OFFICE ISSUED A CIVIL ADMINISTRATIVE COMPLAINT AGAINST THE TRANSWESTERN PIPELINE COMPANY, AT THAT TIME A SUBSIDIARY OF TEXAS EASTERN, FOR IMPROPER MARKING, STORAGE AND DISPOSAL OF PCB CONTAMINATED WASTE OIL IN EARTHEN PITS IN VIOLATION OF EPA REGULATIONS. ON APRIL 24, 1985, OUR REGIONAL

OFFICE ENTERED A CONSENT AGREEMENT AND FINAL ORDER WITH TRANS-WESTERN, SETTling THE COMPLAINT, REQUIRING PAYMENT OF A PENALTY OF \$125,000 AND CLEANUP OF THE EARTHEN DISPOSAL PITS AT FIVE SITES.

IN AUGUST 1985, DURING A MEETING INITIATED BY TEXAS EASTERN TO DISCUSS THE COMPANY'S PIPELINE CONDENSATE REMEDIAL PROGRAM, THE AGENCY WAS ADVISED THAT TEXAS EASTERN HAD USED EARTHEN PITS FOR WASTE DISPOSAL. AS REQUESTED AT THE AUGUST MEETING, TEXAS EASTERN SUBMITTED INFORMATION TO EPA ON NOVEMBER 19, 1985, WHICH INDICATED THAT THREE PITS USED BY THE COMPANY CONTAINED PCBs AND THAT AS MANY AS 48 EARTHEN PITS WHICH HAD BEEN BACK-FILLED MAY HAVE BEEN USED FOR DISPOSAL OF PIPELINE LIQUIDS. TEXAS EASTERN ALSO NOTIFIED EPA THAT ROY F. WESTON, AN ENVIRONMENTAL CONSULTING COMPANY, HAD BEEN HIRED TO CONDUCT PILOT SAMPLING AT SELECTED COMPRESSOR STATION SITES.

ALSO, IN AUGUST 1985 EPA ISSUED A NOTICE OF NONCOMPLIANCE TO TEXAS EASTERN FOR VIOLATIONS OF THE PCB REGULATION AT THEIR DELMONT, PENNSYLVANIA COMPRESSOR STATION.

EPA ISSUED A LETTER TO TEXAS EASTERN ON APRIL 1, 1986, REQUIRING THE SUBMISSION OF ADDITIONAL INFORMATION ON THE COMPANY'S USE OF EARTHEN PITS. IN ITS APRIL 25, 1986 RESPONSE, TEXAS EASTERN INCLUDED A PRELIMINARY SAMPLING REPORT ON EIGHT COMPRESSOR STATION SITES SHOWING PCB CONTAMINATION. THE RESPONSE ALSO INDICATED WIDESPREAD USE OF EARTHEN PITS BY TEXAS EASTERN FOR DISPOSAL OF PIPELINE LIQUIDS.

ON APRIL 9, 1986, HEADQUARTERS NOTIFIED REGIONS II THROUGH VII OF THE PRELIMINARY EVIDENCE REGARDING THE USE OF DISPOSAL PITS BY TEXAS EASTERN.

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FOLLOWING REVIEW OF THE APRIL 25 PRELIMINARY REPORT, EPA MET WITH TEXAS EASTERN ON APRIL 30, 1986. AT THE MEETING, EPA ADVISED TEXAS EASTERN OF POSSIBLE PCB REGULATION VIOLATIONS AND REQUIRED THE SUBMISSION OF ADDITIONAL INFORMATION, INCLUDING MORE DETAILED SAMPLING, TO DETERMINE THE EXTENT OF PCB CONTAMINATION.

ON JUNE 30, 1986, THE OFFICE OF PESTICIDES AND TOXIC SUBSTANCES SUBMITTED A REQUEST TO THE OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING FOR THE INITIATION OF AN INVESTIGATION INTO POSSIBLE CRIMINAL CONDUCT BY TEXAS EASTERN REGARDING ITS DISPOSAL OF WASTES IN VIOLATION OF PCB REGULATIONS.

IN RESPONSE TO THE EVIDENCE THAT EARTHEN PITS HAD BEEN USED FOR DISPOSAL OF PCB CONTAMINATED WASTES, EPA INITIATED A NATIONAL EFFORT IN THE FALL OF 1986 TO DETERMINE THE EXTENT OF DISPOSAL PIT USE BY THE GAS PIPELINE INDUSTRY. BY LETTER OF SEPTEMBER 19, 1986, EPA REQUESTED INFORMATION ON DISPOSAL OF PCB CONTAMINATED PIPELINE LIQUIDS IN EARTHEN PITS FROM ELEVEN INTERSTATE GAS PIPELINE COMPANIES. BASED ON RESPONSES RECEIVED BETWEEN SEPTEMBER AND DECEMBER 1986, AND PREVIOUS INFORMATION ON TEXAS EASTERN AND TRANSWESTERN, EPA IS AWARE OF SEVEN FIRMS THAT HAVE PITS ON THEIR SYSTEMS, FIVE OF THEM REPORTING THE PRESENCE OF PCBs.

IN EARLY NOVEMBER 1986, I WAS CONTACTED BY TEXAS EASTERN AND REQUESTED TO MEET WITH COMPANY OFFICIALS REGARDING PCB CONTAMINATION AT COMPANY COMPRESSOR STATIONS. A MEETING WAS HELD ON NOVEMBER 5, 1986, ATTENDED BY REPRESENTATIVES OF MY OFFICE, THE OFFICE OF PESTICIDES AND TOXIC SUBSTANCES AND THE DEPARTMENT OF

JUSTICE. TEXAS EASTERN BRIEFLY OUTLINED ITS PROBLEMS WITH PCB CONTAMINATION AT COMPRESSOR SITES AND REQUESTED A NATIONAL COORDINATION BY EPA OF COMPRESSOR STATION SITES CLEANUP.

ON DECEMBER 1, 1986, I SENT A MEMORANDUM TO THE REGIONAL ADMINISTRATORS OF REGIONS II - VII ADVISING OF THE PCB CONTAMINATION OF TEXAS EASTERN PITS AND REQUESTING A NATIONAL COORDINATION OF INVESTIGATION EFFORTS TO DETERMINE APPROPRIATE ENFORCEMENT ACTIONS.

AS PROMISED BY TEXAS EASTERN AT THE NOVEMBER 5TH MEETING, EPA RECEIVED THE PRELIMINARY REPORT OF SAMPLING PROGRAM AT TEXAS EASTERN COMPRESSOR STATIONS (THE WESTON REPORT) ON DECEMBER 16, 1986. TEXAS EASTERN ALSO SUBMITTED A REPORT OF A PROPOSED GENERIC CLEANUP PLAN ADDRESSING PCB CONTAMINATION OF EARTHEN PITS. TEXAS EASTERN BRIEFED THE AGENCY ON THE CONTENT OF THE REPORTS DURING A MEETING ON DECEMBER 19, 1986. THE WESTON REPORT INDICATED THAT CONTAMINATED DISPOSAL PITS EXISTED AT 68 COMPRESSOR STATION SITES ALONG THE COMPANY'S INTERSTATE GAS PIPELINE SYSTEM.

ON JANUARY 16, 1987, EPA RECEIVED A PRELIMINARY REPORT FROM TEXAS EASTERN INDICATING THE PRESENCE OF DIOXIN ISOMERS AT LOW LEVELS AT FOUR OF EIGHT SITES TESTED.

INITIAL ASSESSMENT OF THE SUBMITTED PRELIMINARY DATA BY EPA PERSONNEL CONCLUDED THAT FURTHER SAMPLING AND FINAL CLEANUP ACTIONS REGARDING COMPANY DISPOSAL SITES MUST BE UNDERTAKEN PURSUANT TO THE REQUIREMENTS OF RCRA AND CERCLA AS WELL AS TSCA PCB REGULATIONS. TEXAS EASTERN WAS SPECIFICALLY ADVISED OF THIS DETERMINATION ON FEBRUARY 3, 1987, THROUGH A TELEPHONE DISCUSSION BETWEEN LEGAL COUNSEL.

FOLLOWING THE AGENCY'S CONTACT WITH TEXAS EASTERN IN NOVEMBER 1986, EPA FORMED A NATIONAL TEAM TO COORDINATE ENFORCEMENT EFFORTS AGAINST THE COMPANY. THE TEAM INCLUDES LEGAL AND COMPLIANCE PERSONNEL FROM HEADQUARTERS AND ALL AFFECTED REGIONAL OFFICES, AS WELL AS DOJ REPRESENTATIVES. ON FEBRUARY 17 AND MARCH 11, 1987, EPA ISSUED TO TEXAS EASTERN FORMAL STATUTORY REQUESTS FOR INFORMATION PURSUANT TO CERCLA §104 AND RCRA §3007 REQUIRING, UNDER STATUTORY SANCTIONS, THE SUBMISSION OF INFORMATION REGARDING SITE CONDITIONS, THE VERACITY OF SUBMITTED DATA, AND COMPANY OPERATIONAL ACTIVITIES.

EPA INITIATED A COORDINATED EFFORT TO NOTIFY THE AFFECTED STATES OF OUR INFORMATION REGARDING TEXAS EASTERN SITES IN LATE 1986. ON FEBRUARY 19, 1987, THE OFFICE OF WASTE PROGRAMS ENFORCEMENT FORMALLY REQUESTED THE REGIONAL DIVISION DIRECTORS IN CHARGE OF STATE NOTIFICATION UNDER RCRA TO CONTACT THE APPROPRIATE STATE AUTHORITIES. INFORMAL STAFF CONTACTS WITH STATE OFFICIALS THROUGH TYPICAL COMMUNICATION CHANNELS HAD BEGUN THE PREVIOUS WEEKS. ON FEBRUARY 20, 1987, I FORMALLY REQUESTED THE REGIONAL ADMINISTRATORS OF REGIONS II - VII TO ENSURE THAT NOTIFICATION OF AFFECTED STATES WAS CONCLUDED BY MARCH 2.

IN LIGHT OF THE DISPOSAL PIT CONTAMINATION PROBLEMS IDENTIFIED IN THE TEXAS EASTERN ENFORCEMENT EFFORT, AND IN VIEW OF THE POTENTIAL HEALTH HAZARD WHICH MAY BE POSED BY SIMILAR DISPOSAL PRACTICES OF OTHER PIPELINE COMPANIES, EPA ESTABLISHED A SPECIAL TASK FORCE, HEADED BY THE DEPUTY ADMINISTRATOR, ON FEBRUARY 24TH TO COORDINATE AN AGENCY-WIDE EFFORT TO IDENTIFY AND REMEDY ENVIRONMENTAL PROBLEMS ALONG INTERSTATE GAS PIPELINE SYSTEMS. AS

AN INITIAL PHASE OF THIS EFFORT, EPA REGIONAL PERSONNEL, IN COORDINATION WITH AFFECTED STATES, CONCLUDED PRELIMINARY SITE ASSESSMENTS OF ALL TEXAS EASTERN DISPOSAL SITES ON MARCH 5. BASED ON AN INITIAL ASSESSMENT EXCEPT FOR FIVE SITES THAT ARE UNDER FURTHER INVESTIGATION AND CONSIDERATION FOR POSSIBLE SPECIAL ACTION, NONE OF THE TEXAS EASTERN SITES APPEAR TO POSE AN APPARENT IMMEDIATE THREAT OF EXPOSURE TO THE PUBLIC. DISPOSAL PITS PREVIOUSLY IDENTIFIED AT 7 OTHER INTERSTATE GAS PIPELINE COMPANIES ARE CURRENTLY UNDERGOING PRELIMINARY SITE ASSESSMENT AND A NATIONAL EFFORT HAS BEEN INITIATED TO IDENTIFY OTHER POSSIBLE DISPOSAL PITS. THE AGENCY HAS ALSO PLACED EACH SITE INTO OUR SUPERFUND PRELIMINARY ASSESSMENT/SITE INSPECTION SYSTEM FOR FURTHER EVALUATION.

WHILE EPA IS PREPARED TO AND WILL ADDRESS ANY IMMINENT ENDANGERMENT TO HUMAN HEALTH OR THE ENVIRONMENT THROUGH USE OF SUPERFUND AUTHORITIES, THE AGENCY IS CONTINUING ITS ENFORCEMENT EFFORTS AGAINST TEXAS EASTERN. NEGOTIATIONS WITH THE COMPANY UNDER THE AUTHORITY OF RCRA, TSCA AND CERCLA HAVE BEEN INITIATED IN AN ATTEMPT TO OBTAIN AGREEMENT ON A COMPREHENSIVE CLEANUP OF ALL CONTAMINATED COMPANY DISPOSAL SITES AT COMPANY EXPENSE. SAMPLING AND CLEANUP ACTIVITIES AT THE TEXAS EASTERN SITES WILL BE REQUIRED TO COMPLY WITH APPLICABLE AGENCY REGULATIONS FOR THE CLEANUP AND DISPOSAL OF HAZARDOUS AND TOXIC WASTES.

I AND THE OTHER EPA REPRESENTATIVES WOULD BE PLEASED TO ANSWER ANY QUESTIONS WHICH YOU MAY HAVE AT THIS TIME.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 26 1987

OFFICE OF ENFORCEMENT
AND COMPLIANCE
MONITORING

Chairman Frank R. Lautenberg
Committee on Environment and
Public Works
United States Senate
Washington, D.C. 20510-6175

Dear Mr. Chairman:

This is in response to your letters of March 6 to Lee M. Thomas and 27, 1987 to Thomas Adams, concerning the Texas Eastern Pipeline system and its West Amwell, New Jersey site in particular. As the Agency indicated during your March 17, 1987 hearing, we believed that our initial water sample results showing PCB contamination in West Amwell were in error. We have subsequently received the results of two additional rounds of samples of water in the area and have confirmed that the water taken from wells in the West Amwell area show no detectable levels of PCBs. Until we completed our analysis on April 13, the residents whose well water initially showed contamination were instructed to continue using bottled water, at Texas Eastern's expense. Now that we have determined that the water supply of residents of the community does not contain PCBs from the Texas Eastern site, we have suggested that they return to using their own wells for water.

As you noted in your initial letter, state and local health officials met with affected homeowners on March 5 and suggested that these homeowners use bottled water in lieu of what was then thought to be contaminated well water. It was the Agency's intent from the beginning, consistent with the intent of SARA, that Texas Eastern or the Agency would provide and pay for the alternate water supply. The homeowners were instructed to purchase bottled water as the most expedient way to obtain a safe source

of drinking water until EPA or Texas Eastern could provide it. Bottled water was provided by Texas Eastern the next day.

The following responses to your March 27 inquiries are provided:

Question #1

What steps have been undertaken by EPA to make certain that its performance, as discussed at the March 17, 1987 hearing of the Subcommittee on Superfund and Environmental Oversight, relative to Texas Eastern Gas Pipeline's practice of disposing of PCB-contaminated condensate into pits, is not repeated?

Response:

On February 25, 1987, EPA established a special Natural Gas Pipeline Task Force, chaired by Deputy Administrator, A. James Barnes, to coordinate an agency-wide investigation into the use of disposal pits by Texas Eastern and certain other gas pipeline companies. Preliminary site assessments have been conducted at Texas Eastern disposal pits to determine if any site poses a risk of immediate public exposure requiring emergency remedial actions.

In February and March 1987 EPA issued to Texas Eastern three formal information requests pursuant to RCRA/CERCLA authority and a TSCA/CERCLA subpoena requiring the submission of additional information on the company's operational practices and use of disposal pits. EPA is presently involved in enforcement negotiations with the company to reach a settlement requiring a clean-up of all sites, proper disposal of all contaminants and any other necessary remedial actions.

In March 1987 EPA issued formal CERCLA/RCRA information requests to twelve additional gas pipeline companies requesting information on the use of disposal pits. EPA anticipates sending similar information requests to other gas pipeline companies in the near future. Pursuant to an investigation and enforcement strategy under development, all information obtained from pipeline companies will be forwarded to EPA Regional offices and affected States for their review, follow-up and oversight.

Question #2

Why did it take until June 30, 1986 before the Assistant Administrator for Pesticides and Toxic Substances referred the matter to the Office of Enforcement and Compliance Monitoring

Response:

Texas Eastern officials informed EPA verbally in August of 1985 that there "may" have been disposal of PCB pipeline liquids in pits. The Agency immediately requested further information on location, amounts etc. Nothing more was received until November of 1985 and that material provided very limited data regarding the use of disposal pits. Texas Eastern indicated that some pits used for disposal of pipeline liquids might contain PCBs and that some pits had been backfilled. The company agreed to provide more detailed information and stated that an environmental consulting company had been hired to perform a pilot study at eight compressor station sites.

Following review of the November 1985 submittal and EPA/Texas Eastern correspondence, EPA requested and received additional information from the company. However, that information did not arrive until April 1986. EPA also received, in April 1986, the preliminary results of the pilot study of PCB contamination at eight compressor station sites. While this information was far from complete, it did permit the Office of Pesticides and Toxic Substances to make its June 30, 1986 request to OECM for consideration of possible criminal action.

Question #3

During the period, June 30, 1986 - February 21, 1987, did EPA collect its own sampling data from the Texas Eastern pits in order to move forward with an enforcement action, if appropriate? If it did not, was it waiting for the company's own consultant to provide a report?

Response:

In furtherance of Agency requests for detailed information on site conditions, Texas Eastern retained the services of an environmental contractor to collect sampling data at compressor station sites which used disposal pits potentially contaminated with PCBs. The preliminary results of that sampling program were received by EPA in April 1986 and December 1986. Since the sampling was performed by what appeared to be a competent contractor and since there was no apparent indication of an immediate public health threat, the Agency did not use its resources to sample the sites. Where data is received from a polluting facility, the Agency will frequently take samples to verify the data prior to initiating an enforcement action. EPA initiated independent sampling of Texas Eastern sites in February 1987.

Question #4

What is the Agency's opinion of the methodology used in the Weston Report of the Texas Eastern pits?

Response:

Roy F. Weston Inc., the consulting firm retained by Texas Eastern, is an experienced environmental and engineering company. EPA is presently reviewing the sampling and analytical methods reported and described in the final March 1987 Weston Report. The Agency's review should be completed before the end of May.

Question #5

Describe those nonenforcement-sensitive enforcement actions taken by EPA in the matter of Texas Eastern Gas Pipeline's disposing of PCB-contaminated liquids into earthen pits. For each action list the date of commencement.

Response:

On November 29, 1984, the EPA San Francisco regional office issued an administrative complaint against Transwestern Pipeline Company (Transwestern) for violations of the TSCA PCB regulations including improper disposal of PCB-contaminated liquids in earthen pits at five sites in Arizona. At that time, Transwestern was a subsidiary of Texas Eastern Gas Pipeline Company. A Consent Agreement and Final Order, in settlement of the 1984 complaint, was issued on April 24, 1985. The Order required Transwestern to pay a penalty of \$125,000 and to clean up PCBs and hazardous substances discovered in the earthen pits.

Question #6

For the years 1980 thru 1987 describe the resources, both FTE and extramural, that were, and remain, available for PCB compliance both at Headquarters and in the Regions.

Response:

EPA regional offices are allocated technical personnel specifically for PCB compliance activities through EPA's budget and workload process. The enclosed chart lists the PCB specific resources and the total TSCA activity resources allocated to Headquarters (Office of Compliance Monitoring, OPTS) and each regional office for the fiscal years 1980 through 1987. The chart lists Headquarters (Office of Compliance Monitoring) FTEs

available for TSCA compliance and TSCA positions allocated to NEIC. EPA Headquarters TSCA-related positions are not specifically divided by activity. It is estimated that 10-15% of EPA Headquarters and NEIC FTEs are utilized for PCB activities. The total TSCA compliance extramural funds are also listed on the chart. These funds also support all TSCA activities including computers and analytical support.

In addition to resources for technical enforcement activities discussed above, TSCA resources are provided to the Office of Enforcement and Compliance Monitoring. These TSCA resources, which support legal enforcement activities at Headquarters and the Regional Counsels' offices, laboratory activities and the criminal investigation program, can be estimated by statute based on the relative share of workload activity by year. It is not possible, however, to subdivide the TSCA workload to indicate the number of workyears attributable to PCB activities or develop with assurance the workyears for fiscal year 1983 or earlier. The following chart details the total legal enforcement workyears for EPA Headquarters and the regional offices for the years 1984-1987.

WORKYEARS	1987	1986	1985	1984
Total	61	59	58	24
Headquarters	18	17	18	11
Regions	43	42	40	13

Question #7

If the FTE and extramural resource levels were significantly impacted in the beginning (1981) and at the end (1984) of that period, could this have, in part, accounted for the failure to discover that the pits existed or that the company was reporting the withdrawal from the system of tens of thousands of gallons of condensate, but reporting the disposal of only a small quantity of those PCB-contaminated liquids?

Response:

The comparison of FTE and extramural resources for fiscal years 1981-1987 are shown on the chart enclosed in response to your sixth question. Regional PCB resources and Headquarters TSCA resources were reduced between FY 1981 and FY 1984. In the Regions, FTEs for PCB compliance dropped from 31 in FY 1982 to 19 in FY 1983/1984. At Headquarters, TSCA FTEs were reduced from 30

positions in FY 1981 to 14 positions in FY 1983/1984. Additionally, extramural funds supporting TSCA compliance were cut by \$1,361,000 between FY 1981 and FY 1983. This reduction in contract funds resulted in a loss of EPA contracts for PCB analytical support and inspections.

The reduction of resource levels from FY 1981 to FY 1984 did have an impact on the Agency's PCB program which made it difficult for EPA to monitor fully Texas Eastern's activities pursuant to the pipeline program. The pipeline program presented a particular challenge as a PCB activity not anticipated through the budget process.

Question #8

What portion of the Agency's operating budget constitutes enforcement activities (separately and in combination with the Office of Enforcement and Compliance Monitoring and the Programs' compliance monitoring activities)?

Response:

As noted on the following chart, over 20% of Agency designated FTE's and nearly 10% of the Agency's requested operating budget will be used for enforcement related activities. These figures do not include Superfund resources, which are requested under a separate appropriation.

	FTE	DOLLARS
Total Agency Operating Budget	11,459.9	1,455,292,000
Enforcement	2,304.8	142,444,800
OECM Enforcement	409.0	21,511,000
TSCA Enforcement	180.9	11,348,100

OECM enforcement accounts for 18% of enforcement FTEs and 15% of enforcement designated dollars. TSCA enforcement accounts for nearly 8% of both enforcement FTEs and enforcement designated dollars when compared with total agency enforcement resources. The Agency estimates that approximately 20% of TSCA enforcement resources are related to PCB enforcement.

Question #9

What portion of the Office of Enforcement and Compliance

Monitoring (OECM) is the National Enforcement Investigations Center (NEIC) (List all resources and FTE's).

Response:

The interdisciplinary resources for the National Enforcement Investigations Center (NEIC) account for nearly 24% of both FTEs and dollars requested for the Office of Enforcement and Compliance Monitoring in the FY 1988 Congressional Budget Request, as indicated below. NEIC resources include program offices for technical support and the criminal investigation program. The following chart outlines the OECM FY 1988 budget request.

	FY 1988 CONGRESSIONAL REQUEST	
	FTE	DOLLARS
HEADQUARTERS ENFORCEMENT		
Policy and Operations	93.7	\$ 5,221,200
Extramural Funds		\$ 330,600
REGIONAL ENFORCEMENT		
Policy and Operations	218.8	\$ 9,217,600
TECHNICAL SUPPORT	61.5	\$ 3,071,000
Extramural Funds		\$ 1,610,900
CRIMINAL INVESTIGATION PROGRAM	35.0	\$ 2,059,700
TOTAL OECM RESOURCES	409.0	\$21,511,000

NOTE: This response excludes Superfund-designated resources (both dollars and FTEs).

Question #10

How are OECM's resources broken down as between criminal and civil enforcement activities (list all resources and FTE's)?

Response:

Total OECM enforcement resources equal 409.0 FTEs and \$21,511,000 in contract funds. Of this total, approximately 64 FTE and \$3,500,000 in contract funds provide support to the agency's criminal investigation program. This includes the 35 criminal investigators (\$2,059,700), as well as estimates for legal and technical support for criminal investigations provided within resources available to OECM Headquarters and regional offices and the National Enforcement Investigations Center. The balance of OECM resources are used for civil judicial and administrative enforcement, compliance monitoring and strategic planning. The following chart indicates OECM resources provided in support of criminal investigation activities.

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	<u>FTE</u>	<u>DOLLARS</u>
TOTAL OEMC ENFORCEMENT RESOURCES	409.0	\$21,511,000
Criminal Investigations Program Support:		
Criminal Investigators	35.0	\$ 2,059,700
Headquarters Legal Criminal Support	10.4	\$ 579,500
Regional Legal Criminal Support	6.4	\$ 269,600
NEIC Technical & Lab Criminal Support	12.1	\$ 604,200
TOTAL CRIMINAL RESOURCES	63.9	\$ 3,513,000

NOTE: This response excludes consideration of Superfund resources.

Question #11

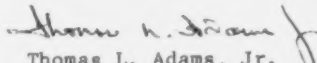
How many criminal investigators work for OEMC and NEIC?

Response:

The Agency's FY 1988 budget request for the criminal investigations program includes 35 interdisciplinary FTEs and 17.3 Superfund FTEs for a total of 42.3 FTE. This figure includes investigators and administrative support staff. At present there are 37 criminal investigators. The criminal investigators are stationed in the ten EPA regional offices under the direction of the Director of the National Enforcement Investigations Center, who in turn reports to the Assistant Administrator for Enforcement and Compliance Monitoring.

We have also enclosed the Agency's response to Senator Pressler's questions.

Sincerely,


Thomas L. Adams, Jr.
Assistant Administrator

Enclosures

PCB AND TOTAL RESOURCES, 1980-1987, REGIONS AND HEADQUARTERS

Region/Year	1980	1981	1982	1983	1984	1985	1986	1987
I	0.9	1.2	1.5	1.0	1.4	2.0	2.1	1.7
II	1.4	3.4	3.3	2.1	2.9	4.4	4.9	4.6
III	3.0	1.0	2.8	1.3	1.5	3.4	3.3	3.3
IV	4.1	2.7	3.1	3.0	2.2	4.6	4.4	4.7
V	4.1	1.7	4.4	3.7	4.5	10.0	10.1	7.7
VI	2.2	4.1	4.9	2.6	2.5	3.9	5.1	5.6
VII	2.4	1.7	2.3	2.0	1.2	2.6	2.9	5.1
VIII	1.1	4.1	4.8	0.7	0.6	1.2	1.1	1.4
IX	1.2	1.0	1.6	1.7	1.9	3.3	3.5	3.3
X	0.7	3.1	2.4	0.9	0.7	2.3	1.5	1.6
Regions Subtotal PCBs only	21.1	24.0	31.1	19.0	19.4	37.7	38.9	39.0
Regions Grand Total	40.6	53.2	68.3	54.3	72.1	117.9	150.4	143.8
NEIC								
TSCA Total			4.1	4.1	4.1	4.1	10.6	10.6
HQ								
TSCA Total	38.6	30.0	19.9	14.1	14.3	18.8	21.4	23.2
HQ/NEIC	38.6	30.0	24.0	18.2	18.4	22.9	32.0	33.8
Extramural \$ (does not include AARP)	1,079,200	1,568,600	927,100	207,000	264,700	253,900	362,400	467,500

TESTIMONY OF
CHRISTOPHER J. DAGGETT
REGIONAL ADMINISTRATOR
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION 2
BEFORE THE
SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

March 17, 1987

I AM CHRISTOPHER J. DAGGETT, REGIONAL ADMINISTRATOR OF THE U. S. ENVIRONMENTAL PROTECTION AGENCY IN REGION 2. THE REGION IS COMPRISED OF THE STATES OF NEW JERSEY, NEW YORK, PUERTO RICO, AND THE VIRGIN ISLANDS. MR. ADAMS HAS PROVIDED YOU WITH INFORMATION ON THE AGENCY'S ACTIONS WITH REGARD TO PCBs IN NATURAL GAS PIPELINES SINCE THEY WERE FIRST DISCOVERED BY THE LONG ISLAND LIGHTING COMPANY (LILCO) IN JANUARY 1981. I WILL GIVE YOU A SUMMARY OF REGION 2'S INVOLVEMENT IN THE INITIAL SAMPLING EFFORT ON LONG ISLAND, OUR PARTICIPATION IN THE AGENCY'S REMEDIAL AND ENFORCEMENT PROGRAMS SINCE THEN, AND OUR MORE RECENT EFFORTS TO INVESTIGATE THOSE SITES IN REGION 2 WHERE PCBs HAVE BEEN DISPOSED IN EARTHEN PITS. PCBs WERE DISCOVERED IN THE THE LONG ISLAND LIGHTING COMPANY'S (LILCO) NATURAL GAS DISTRIBUTION SYSTEM IN JANUARY 1981. THE COMPANY HAD ANALYZED SAMPLES OF CONDENSATE/OIL MIXTURES FOUND IN SEVERAL NATURAL GAS SERVICE LINE METERS. THE PCB CONCENTRATION WAS APPROXIMATELY 4,000 PARTS PER MILLION (ppm). THIS INFORMATION WAS BROUGHT TO THE ATTENTION OF EPA AND THE

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NEW YORK STATE DEPARTMENT OF HEALTH. THE DEPARTMENT OF HEALTH INITIATED A SAMPLING PROGRAM TO DETERMINE IF THERE WERE DETECTABLE LEVELS OF PCBs IN THESE HOMES. SAMPLES WERE TAKEN IN 53 HOMES SERVED WITH NATURAL GAS AND IN 50 CONTROL HOMES WHERE NATURAL GAS WAS NOT USED. RESULTS OF THE SAMPLING SHOWED NO SIGNIFICANT DIFFERENCE OF MEASURED PCBs IN THE INDOOR AIR BETWEEN THE CONTROL HOMES AND THOSE HOMES WHICH WERE SERVED WITH NATURAL GAS.

AT THE SAME TIME, AS PART OF A NATIONAL RESPONSE TO THE PROBLEM THE REGION INITIATED A PROGRAM TO DETERMINE THE EXTENT OF PCB CONTAMINATION IN GAS DISTRIBUTION SYSTEMS THROUGHOUT THE REGION. ALL NATURAL GAS DISTRIBUTION UTILITIES IN NEW YORK AND NEW JERSEY WERE CONTACTED AND ASKED TO MONITOR THE AMOUNTS AND PCB CONTENT OF ANY CONDENSATES REMOVED FROM THEIR SYSTEMS. THEY WERE ALSO INFORMED OF THE TOXIC SUBSTANCES AND CONTROL ACT (TSCA) REQUIREMENTS FOR HANDLING AND DISPOSAL OF PCBs. AT THAT TIME WE WERE UNAWARE OF THE COMPANIES PRIOR PRACTICE OF DISPOSING OF PCB CONTAMINATED CONDENSATE IN UNLINED EARTHEN PITS.

THE UTILITIES SUBMITTED PERIODIC REPORTS TO THE REGION OVER THE NEXT TWO YEARS. IN SUMMARY, 3 UTILITIES IN NEW YORK AND 3 IN NEW JERSEY REPORTED DETECTABLE LEVELS OF PCBs IN THEIR DISTRIBUTION SYSTEMS. THEIR RESPONSES ALSO INDICATED THAT THEY WERE DISPOSING OF THE CONTAMINATED CONDENSATE IN ACCORDANCE WITH TSCA REQUIREMENTS.

ON MARCH 1, 1982, REGION 2 SENT LETTERS TO ALL NATURAL GAS DISTRIBUTION UTILITIES REQUESTING EACH TO SUBMIT A PLAN FOR HANDLING ALL PCB LIQUIDS REMOVED FROM THEIR SYSTEMS. SPECIFICALLY, THEY WERE ASKED TO TELL US OF LOCATIONS WHERE LIQUIDS WERE REMOVED, AND THE QUANTITIES AND LEVELS OF PCB CONTAMINATION. THEY WERE ALSO ASKED TO GIVE US A LONG-TERM MONITORING PROGRAM FOR PCBs, A WORKER PROTECTION PROGRAM, AND A PLAN FOR HANDLING, MARKING, STORING AND DISPOSING OF PCBs.

RESPONSES INDICATED THAT SOME UTILITIES CONTINUED TO REMOVE CONDENSATES CONTAINING PCBs. OTHERS REPORTED MINIMAL QUANTITIES OF LIQUIDS BEING REMOVED AND, WHEN PRESENT, THE LIQUIDS TENDED TO CONTAIN LESS THAN 50 ppm PCBs. IN CASES WHERE LIQUIDS

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CONTAINED GREATER THAN 50 ppm OF PCBs, THE COMPANIES INFORMED US THAT ~~THEY~~ WERE HANDLING, MARKING, STORING AND DISPOSING OF THE PCB LIQUIDS IN CONFORMANCE WITH THE PCB REGULATIONS. IN GENERAL, THE QUANTITIES OF LIQUID CONDENSATE REMOVED WERE SIGNIFICANTLY REDUCED FROM 1981 LEVELS. THE UTILITIES ALSO INDICATED THAT THEY HAD ESTABLISHED STANDARD OPERATING PROCEDURES TO PROTECT EMPLOYEES FROM EXPOSURE.

ON NOVEMBER 10, 1983 LETTERS WERE SENT TO UTILITIES REQUESTING STATUS REPORTS ON THEIR PCB MONITORING PROGRAM. THEIR REPORTS INDICATED THE CONTINUING TREND OF DECREASING AMOUNTS OF LIQUID CONDENSATE BEING REMOVED FROM THE UTILITY DISTRIBUTION SYSTEMS.

IN SUMMARY, REGION 2'S INVOLVEMENT FOCUSED FIRST ON ASSURING THAT PCB'S IN THE PIPELINES DID NOT PRESENT A HEALTH THREAT TO GAS COMPANY CUSTOMERS, THEN ON IDENTIFYING THE EXTENT OF CONTAMINATION IN THE UTILITY SYSTEMS, WORKING WITH THE UTILITIES TO ASSURE THAT THEY DEVELOPED MONITORING AND WORKER SAFETY PLANS, AND THAT PROPER HANDLING, STORAGE, AND DISPOSAL PRACTICES WERE BEING FOLLOWED. HEADQUARTERS TOOK THE LEAD IN DEVELOPING

MONITORING, REMEDIATION, AND ENFORCEMENT PROGRAMS FOR THE
INTERSTATE GAS TRANSMISSION COMPANIES.

IN AN APRIL 9, 1986 MEMORANDUM, HEADQUARTERS NOTIFIED US OF TEXAS
EASTERN'S PAST PRACTICE OF USING EARTHEN PITS FOR DISPOSAL OF
PIPELINE LIQUIDS AND WASTE OILS. SOME OF THE PITS WERE REPORTED
TO BE CONTAMINATED WITH PCBs. ONE OF THE PCB CONTAMINATED SITES
REPORTED WAS THE LAMBERTVILLE FACILITY. WE WERE INFORMED THAT
HEADQUARTERS HAD ASKED THE COMPANY TO PROVIDE ADDITIONAL INFORMA-
TION CONCERNING THESE PITS, WHICH WOULD BE FORWARDED TO THE
REGIONAL OFFICES FOR FOLLOW-UP AND ACTION IF WARRANTED.

THE REGION WAS INFORMED BY A DECEMBER 1, 1986 MEMORANDUM FROM
ASSISTANT ADMINISTRATOR THOMAS L. ADAMS OF THE STATUS OF THE
TEXAS EASTERN INVESTIGATION. WE WERE REQUESTED TO COORDINATE
ANY ENFORCEMENT ACTIONS AGAINST THE COMPANY WITH THE OFFICE OF
ENFORCEMENT AND COMPLIANCE MONITORING. THE LETTER ALSO INDICATED
THAT TEXAS EASTERN HAD INITIATED A STUDY TO DETERMINE THE
EXTENT OF POSSIBLE CONTAMINATION, AND THAT THE REPORT WOULD BE

SUBMITTED TO THE AGENCY IN JANUARY 1987. BECAUSE HEADQUARTERS HAD TAKEN THE LEAD IN ENFORCEMENT AGAINST TEXAS EASTERN, AND BECAUSE WE EXPECTED SITE-SPECIFIC INFORMATION FROM THE COMPANY'S REPORT IN JANUARY, WE DID NOT INITIATE ANY INSPECTIONS AT THE TEXAS EASTERN FACILITIES IN THIS REGION AT THAT TIME.

REGION 2 WAS INFORMED BY MEMORANDA DATED FEBRUARY 19 and 20, 1987 FROM GENE LUCERO, DIRECTOR, OFFICE OF WASTE PROGRAMS ENFORCEMENT, AND THOMAS ADAMS, ASSISTANT ADMINISTRATOR, OFFICE OF ENFORCEMENT COMPLIANCE AND MONITORING, THAT THE TEXAS EASTERN GAS PIPELINE COMPANY HAD REPORTED THE USE OF EARTHEN PITS FOR PCB CONTAMINATED CONDENSATE AT THEIR LAMBERTVILLE AND LINDEN COMPRESSOR STATION FACILITIES IN NEW JERSEY. HEADQUARTERS SPECIFICALLY ASKED IN THE FEBRUARY 20 MEMORANDUM THAT WE NOTIFY THE STATE OF THIS INFORMATION BY MARCH 2.

WE INFORMED THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) OF THE COMPANY'S PAST PRACTICES AT THESE FACILITIES ON FEBRUARY 21. ON FEBRUARY 25 WE ASKED FOR THE DEP'S PARTICIPATION IN PRELIMINARY ASSESSMENTS (PA's) OF THESE TWO COMPRESSOR STATIONS.

ON FEBRUARY 26 REGION 2 AND DEP STAFF INSPECTED BOTH THE LAMBERTVILLE AND LINDEN SITES. THE PURPOSE OF THESE INSPECTIONS WAS TO DETERMINE IF THERE WAS A POSSIBLE IMMEDIATE PUBLIC HEALTH THREAT. THEY WERE NOT INTENDED TO BE COMPLETE SITE INSPECTIONS (SIS). INFORMATION GATHERED IN THE PRELIMINARY ASSESSMENT AS WELL AS DATA TO BE SUBMITTED IN THE COMPANY'S REPORT ARE NECESSARY TO DEVELOP A MONITORING PLAN FOR EACH INDIVIDUAL SITE PRIOR TO THE SITE INSPECTIONS.

LAMBERTVILLE

ON FEBRUARY 26 A PRELIMINARY ASSESSMENT WAS CONDUCTED AT THE LAMBERTVILLE SITE BY EPA REGION 2 STAFF AND REPRESENTATIVES OF THE NEW JERSEY DEP AND THE HUNTERDON COUNTY HEALTH DEPARTMENT. THIS IS A 27 ACRE SITE LOCATED IN WEST AMWELL TOWNSHIP, NEW JERSEY. THE SITE CONTAINS TWO DRAINAGE DITCHES RUNNING PARALLEL TO A CREEK WHICH FEEDS THE DELAWARE RIVER. THE FACILITY IS SECURE FROM PUBLIC ACCESS BY A SIX FOOT FENCE WHICH SURROUNDS THE ENTIRE SITE. EIGHT SEDIMENT SAMPLES WERE TAKEN: FOUR FROM THE VICINITY OF THE PIT AREA, THREE FROM THE DITCH, AND ONE FROM

AN EQUIPMENT HANDLING AREA. THESE SAMPLES HAVE BEEN SENT TO OUR ~~CONTACT~~ LABORATORY TO BE ANALYZED FOR PCBs AND DIOXINS. DIOXIN RESULTS ARE EXPECTED BY THE END OF THIS MONTH. PCB RESULTS ARE EXPECTED IN MID-APRIL.

DISCUSSIONS WITH THE HUNTERDON COUNTY HEALTH OFFICER INDICATED THAT RESIDENTS LIVING IN THE IMMEDIATE VICINITY OF THE FACILITY OBTAINED THEIR DRINKING WATER FROM PRIVATE GROUND WATER WELLS. WORKING WITH THE HEALTH OFFICER AND THE NJDEP, WE IDENTIFIED NINE RESIDENCES TO BE SAMPLED. THE HOMEOWNERS WERE NOTIFIED ON FEBRUARY 27, AND ON FEBRUARY 28 SAMPLES WERE TAKEN FROM THE NINE RESIDENTIAL DRINKING WATER WELLS AND FROM ONE WELL ON THE TEXAS EASTERN FACILITY PROPERTY. THE WATER SAMPLES WERE ANALYZED FOR PCB's AND FOR PURGEABLE ORGANIC COMPOUNDS.

ANALYSIS OF THESE SAMPLES WAS COMPLETED ON MARCH 4 AND DATA QUALITY ASSURED AT APPROXIMATELY 3:00 PM ON MARCH 5. THE DATA SHOWED DETECTABLE LEVELS OF PCBs IN 5 OF THE 9 RESIDENTIAL WELLS. THE DETECTABLE READINGS WERE 0.51 PARTS PER BILLION (ppb), 0.56 ppb, 1.17 ppb, 1.19 ppb, and 4.40 ppb. THE SAMPLE FROM

THE WELL ON THE FACILITY PROPERTY DID NOT HAVE DETECTABLE LEVELS OF PCBs. NO PURGEABLE ORGANIC COMPOUNDS WERE DISCOVERED IN THE WATER SAMPLES.

WE ASKED THE AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR) FOR AN ASSESSMENT OF THE RISKS TO THE RESIDENTS USING THIS WATER. THEY ORALLY ADVISED US THAT ANYONE WHOSE WELL SAMPLES SHOWED LEVELS ABOVE 0.9 ppb SHOULD NOT CONTINUE TO USE THE WATER FOR DRINKING PURPOSES AND THAT ALL USE OF THE WATER SHOULD BE ELIMINATED WITHIN A REASONABLE PERIOD (FOUR TO SIX WEEKS).

IT IS ALSO IMPORTANT TO MENTION THAT THE NEW JERSEY DEP USES 0.7 ppb AS AN ACTION LEVEL FOR PCBs IN DRINKING WATER. EPA IS IN THE PROCESS OF ESTABLISHING A SHORT TERM ACTION LEVEL FOR PCBs IN DRINKING WATER.

NORMAL AGENCY POLICY WOULD HAVE CALLED FOR COMPLETION OF CONFIRMING TESTS OF THESE NINE WELLS BEFORE TAKING ANY ACTION. HOWEVER, IN THIS CASE, BECAUSE OF THE HIGH LEVEL OF PUBLIC

CONCERN, THE POTENTIAL ENDANGERMENT TO HUMAN HEALTH AND THE LENGTH OF TIME THE CHEMICALS WERE AVAILABLE IN THE ENVIRONMENT, WE DECIDED TO TAKE THE PRECAUTION OF RECOMMENDING THAT PEOPLE NOT DRINK THEIR WATER WHILE THE CONFIRMING TESTS WERE BEING COMPLETED.

WE THEN NOTIFIED THE NJDEP AND THE HUNTERDON COUNTY HEALTH OFFICER, WHO MET PRIVATELY WITH EACH OF THE AFFECTED RESIDENTS THAT EVENING, MARCH 5, TO ADVISE THEM TO STOP USING THEIR WELL WATER FOR DRINKING PURPOSES AND THAT THERE WAS A NEED TO PROVIDE WATER PURIFICATION SYSTEMS, SUCH AS CARBON FILTERS, WITHIN A FOUR TO SIX WEEK PERIOD ON THE WELLS THAT TESTED POSITIVE. THEY WERE ALSO ADVISED THAT EITHER EPA OR TEXAS EASTERN WOULD BEGIN PROVIDING BOTTLED WATER FOR THEM AS SOON AS POSSIBLE.

THE FOLLOWING MORNING WE MET WITH NJDEP AND TEXAS EASTERN REPRESENTATIVES TO ADVISE THEM OF OUR FINDINGS AND TO OFFER THE COMPANY THE OPPORTUNITY TO UNDERTAKE THIS REMOVAL ACTION. THIS IS THE PROCEDURE FOLLOWED WHEN EPA IS CONSIDERING USING TRUST FUNDS UNDER THE COMPREHENSIVE ENVIRONMENTAL RESPONSE

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COMPENSATION AND LIABILITY ACT (CERCLA), AS AMENDED BY THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA). THE COMPANY'S ROLE WAS DEFINED AND WAS INCORPORATED IN AN ADMINISTRATIVE ORDER ON CONSENT UNDER SECTION 106(a) OF CERCLA DURING THE FOLLOWING WEEK. A DRAFT ORDER WAS FORWARDED TO THE COMPANY ON FRIDAY, MARCH 13, 1987.

THE COMPANY AGREED TO PROVIDE DIRECT DELIVERY OF BOTTLED WATER TO THE FIVE HOMES WITH DETECTABLE LEVELS. THIS BEGAN ON FRIDAY EVENING MARCH 6. IN ADDITION, THE COMPANY MADE BOTTLED WATER AVAILABLE THE FOLLOWING DAY AT THE MOUNT AIRY MUNICIPAL BUILDING TO ALL OTHER RESIDENTS OF WEST AMWELL TOWNSHIP THAT WISHED TO RECEIVE IT. THIS WAS ACCOMPLISHED BEGINNING AT 10:00 am ON MARCH 7.

TEXAS EASTERN ALSO AGREED TO DESIGN AND INSTALL WATER PURIFICATION SYSTEMS (SUCH AS CARBON TREATMENT UNITS) AT THE FIVE HOMES AT WHICH PCB CONTAMINATION WAS FOUND IN THE FIRST ROUND OF SAMPLING. THESE SYSTEMS WILL BE REQUIRED TO RESULT IN A DRINKING WATER SUPPLY WITH A CONCENTRATION OF LESS THAN THE 0.1 ppb DETECTION

LIMIT. THESE SYSTEMS WILL ALSO BE PROVIDED FOR ANY ADDITIONAL RESIDENCES FOUND TO HAVE PCB CONTAMINATION BY FURTHER SAMPLING RESULTS.

IN ADDITION, UNDER THE PROPOSED CONSENT AGREEMENT, TEXAS EASTERN WILL ASSUME ALL COSTS ASSOCIATED WITH ANY EXPANDED WELL WATER SAMPLING, INCLUDING LABORATORY ANALYTICAL AND REPORTING EXPENSES. THE COMPANY WILL ALSO REIMBURSE EPA FOR EXPENSES ALREADY INCURRED AS WELL AS FOR COSTS ASSOCIATED WITH EPA OVERVIEW OF THIS REMOVAL ACTION. ANY ACTIONS PERFORMED BY TEXAS EASTERN WILL BE DONE WITH CAREFUL OVERSIGHT BY EPA.

ON MARCH 6 WE RESAMPLED THE NINE RESIDENTIAL WELLS AND ONE WELL ON THE FACILITY PROPERTY FOR CONFIRMATION OF THE FIRST ANALYSES. WE ALSO EXPANDED THE AREA OF INVESTIGATION AND TOOK SAMPLES FROM ELEVEN ADDITIONAL HOMES AND TWO SCHOOLS. MULTIPLE SAMPLES WERE TAKEN FROM THESE WELLS THROUGHOUT THE DAY. WE HAVE COMPLETED THE ANALYSIS OF THE FIRST SET OF SAMPLES FROM THE ORIGINAL NINE HOMES AND THE COMPANY WELL. ALL SHOWED NON-DETECTABLE LEVELS OF PCBs AT THE 0.1 ppb DETECTION LIMIT. THE RESULTS FROM

THE ~~REMAIN~~ ADDITIONAL HOMES AND THE TWO SCHOOLS ARE EXPECTED BY
APRIL 15, 1987.

AFTER FURTHER REVIEW OF THE ORIGINAL DATA COLLECTED, WE NOW HAVE
REASON TO BELIEVE THAT LABORATORY CONTAMINATION MAY HAVE BEEN THE
CAUSE FOR THE POSITIVE FINDINGS OF PCBs IN THE DRINKING WATER.
WE HAVE NOTIFIED TOWNSHIP OFFICIALS, THE RESIDENTS AND THE COMPANY
ABOUT THIS INFORMATION, AND THAT OUR SECOND ROUND DATA RESULTS
INDICATE THAT PCBs WERE NOT FOUND ABOVE THE 0.1 ppb DETECTION
LEVEL. UNTIL WE RECEIVE THE RESULTS OF A THIRD ROUND OF DATA
BEING ANALYZED BY OUR CONTRACT LABORATORY, WE ARE RECOMMENDING
THAT THE FIVE RESIDENCES CONTINUE TO USE THE BOTTLED WATER. WE
HAVE ALSO DEVELOPED A FURTHER PLAN TO ENSURE THAT WE HAVE A TRUE
PICTURE OF ANY CONTAMINATION OF DRINKING WATER WELLS IN THIS AREA.
AT THIS ~~TIME~~, WE WILL NOT ASK THE COMPANY TO INSTALL WATER
FILTRATION SYSTEMS. WATER FILTRATION SYSTEMS WILL BE INSTALLED
ONLY IF THE THIRD ROUND OF SAMPLING OR ANY SUBSEQUENT SAMPLING
INDICATE PCBs ABOVE DETECTION LEVELS.

LINDEN

THE LINDEN SITE IS LOCATED ON RANGE ROAD, ADJACENT TO THE RAHWAY RIVER. ON THE DAY OF OUR SITE INSPECTION WE WERE UNABLE TO DETERMINE THE LOCATION OF THE PIT SO NO SOIL SAMPLES WERE TAKEN.

WE WERE, HOWEVER, ABLE TO DETERMINE THAT THE LINDEN FACILITY IS ACTIVE, AND PROPERLY SECURED FROM PUBLIC ACCESS. WE ALSO FOUND THAT THERE ARE NO PRIVATE DRINKING WATER WELLS IN THE VICINITY OF THIS SITE, AND DO NOT BELIEVE AN IMMEDIATE HEALTH THREAT EXISTS.

THE COMPANY HAS PROVIDED US WITH ADDITIONAL INFORMATION ON THIS SITE TO ASSIST US IN LOCATING THE PIT. WE ARE CURRENTLY DEVELOPING A COMPREHENSIVE MONITORING PLAN, AND EXPECT TO BEGIN SAMPLING DURING THE WEEK OF MARCH 23.

OTHER TEXAS EASTERN FACILITIES

AS A FOLLOW-UP TO OUR INVESTIGATION INTO THE LAMBERTVILLE AND LINDEN FACILITIES, WE INSPECTED TWO ADDITIONAL TEXAS EASTERN

FACILITIES IN REGION 2: COMPRESSOR STATIONS IN EAST HANOVER, NEW JERSEY, AND ON STATEN ISLAND, NEW YORK.

A PRELIMINARY ASSESSMENT WAS CONDUCTED AT THE EAST HANOVER FACILITY ON MARCH 4, 1987. A TSCA COMPLIANCE AND A RCRA INSPECTION WERE CONDUCTED AT THE SAME TIME. TWO OIL SAMPLES FROM COMPRESSORS AND ONE FROM A CONDENSATE STORAGE TANK WERE TAKEN. THE COMPANY INFORMED US THAT NO PITS WERE EVER UTILIZED FOR DISPOSAL OF ANY WASTE LIQUIDS AT THIS SITE. PIPELINE CONDENSATES AND OTHER WASTE OILS WERE TRANSPORTED TO OTHER COMPANY FACILITIES FOR DISPOSAL. THE THREE SAMPLES TAKEN HAVE BEEN SENT TO OUR CONTRACT LABORATORY FOR ANALYSIS.

ON MARCH 4, 1987 A PRELIMINARY ASSESSMENT, A TSCA COMPLIANCE INSPECTION AND A RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) INSPECTION WERE ALSO CONDUCTED AT THE STATEN ISLAND SITE. ONE OIL SAMPLE WAS TAKEN FROM A CONDENSATE COLLECTION TANK ON THE PROPERTY. THIS SAMPLE WILL ALSO BE ANALYZED BY OUR CONTRACT LABORATORY.

TRANSCONTINENTAL GAS PIPE LINE CORPORATION

WE WERE INFORMED BY HEADQUARTERS ON MARCH 10, 1987 OF A TRANSCONTINENTAL GAS PIPE LINE CORPORATION FACILITY IN CARLSTADT, NEW JERSEY WHERE A PIT IS USED TO FLARE ACCIDENTAL RELEASES FROM A VAPORIZATION PROCESS. ON MARCH 11 WE CONDUCTED A PRELIMINARY ASSESSMENT AND COMPLETE TSCA INSPECTION AT THE CARLSTADT FACILITY. THIS FACILITY IS A GAS LIQUIFACTION PLANT. NO CONDENSATE FROM THE PIPELINE IS COLLECTED AT THIS LOCATION. WE COLLECTED 1 WASTE OIL AND 3 LUBRICATING OIL SAMPLES. THESE HAVE BEEN SENT TO OUR CONTRACT LABORATORY FOR ANALYSIS.

ON MARCH 12, 1987 A PRELIMINARY ASSESSMENT AND COMPLETE TSCA INSPECTION WERE CONDUCTED AT ANOTHER TRANSCONTINENTAL GAS PIPELINE FACILITY LOCATED IN NESHANIC STATION, NEW JERSEY. THE COMPANY INDICATED THAT NO DISPOSAL PITS WERE USED AT THIS SITE. OIL SAMPLES WERE TAKEN FROM TWO COMPRESSORS. THESE WILL ALSO BE ANALYZED FOR PCBs BY OUR CONTRACT LABORATORY.

FOR ALL OF THE ADDITIONAL SITES, USING INFORMATION GATHERED DURING THE PRELIMINARY ASSESSMENTS, ANALYTICAL RESULTS OF

SAMPLES TAKEN, AND INFORMATION PROVIDED TO US BY THE COMPANIES, WE WILL DETERMINE WHAT, IF ANY, ADDITIONAL SAMPLING MUST BE UNDERTAKEN. WHERE ADDITIONAL SAMPLING IS REQUIRED, COMPLETE SITE INSPECTIONS (SIS) WILL BE PERFORMED.

I HOPE THAT THIS INFORMATION HAS BEEN HELPFUL. WE WILL BE PLEASED TO PROVIDE YOU WITH ANY BACKGROUND DOCUMENTS YOU WOULD LIKE RELATIVE TO REGION 2'S INVOLVEMENT SINCE 1981. I WILL ALSO BE PLEASED TO ANSWER ANY QUESTIONS YOU MAY HAVE.

Let's protect our earth



STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
JOHN W. GASTON, ASSISTANT COMMISSIONER

CN 028
TRENTON, N.J. 08625
609-292-1250

TESTIMONY OF JOHN W. GASTON, JR.
BEFORE THE SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT

MARCH 17, 1987

Senator Lautenberg, my name is John W. Gaston, Jr. I am the Assistant Commissioner for Hazardous Waste Management for the New Jersey Department of Environmental Protection.

It is a pleasure to appear before you in your new capacity as Chairman of the Subcommittee on Superfund and Environmental Oversight of the Senate Committee on Environment and Public Works. The subject of this hearing, the issues raised by the dumping of PCB contaminated liquids by the Texas Eastern Gas line is certainly a topic which the NJDEP has been concerned with.

The fundamental problem with which DEP has been struggling is that almost overnight, we were advised that potential problems might exist in New Jersey at pipeline facilities owned and operated by the Texas Eastern.

Our Commissioner received a letter on February 23, 1987 from Texas Eastern President Howard C. Homayer. From the moment that we were notified our first concern was whether or not potential public health issues related to the dumping practices in New Jersey sites had been assessed by the company. Several telephone conversations with company officials during the week of February 22 led us to conclude that one of the principle mechanisms for public health impact, the contamination of local well drinking water supplies had not been studied by the company. Furthermore, the company's survey report performed by Roy F. Waston, Inc. indicated that PCB dumping practices had taken place over a number of years at the West Amwell site. These observations were verified when the company met with our staff and Regional EPA staff on February 27, 1987. Our attention focused on the West Amwell site because of local individual drinking wells were used.

As a result, DEP and EPA Region 2 instituted a first round sampling of potable wells in the vicinity of the Texas Eastern site to provide some evidence of the potential for PCB migration to these wells. State/regional personnel arranged to sample nine homeowner wells in the vicinity of the Texas Eastern site as well

as the onsite Texas Eastern well. The goal was to provide public health related data on the potential migration of PCBs through the groundwater to the drinking supplies. I must indicate, unfortunately, that this had not been the focus of either the company or those in Washington who had been handling this case prior to public release by Senator Bumpers. As seems to be the rule, when you look for something, you generally find it.

Our first round samples showed five of the ten samples yielding PCB contamination. With this information in hand, the State and Regional representatives had no choice but to develop an immediate game plan for divulging the information and conservatively protecting the public health of the families that were impacted. Our staff attended a public meeting in West Amwell Township on March 5, 1987 to discuss the first round of EPA monitoring, and to lay out a program of subsequent confirmatory monitoring as well as expanded network of additional monitoring points.

As yesterday's joint DEP/Regional EPA press release indicates (see attachment A) it appears that the initial positive results were at least in part, a result of a lab contamination problem. Results of the sampling run, done on May 6, by EPA and by Texas Eastern consultant, Roy F. Weston, all produced negative results. Another round of sampling that was done by EPA on the afternoon of March 6 is yet to be analyzed. EPA and DEP will be taking another round of samples on March 18 which are to be analyzed at one of the state operated certified labs. Further testing by local residents and by state and EPA will be conducted in wells in the vicinity of the site. Any positive observations will be confirmed by subsequent sampling by the State or EPA. We are committed to pursuing the issue of PCBs in drinking water quality until there is a definitive conclusion.

Over the long term Texas Eastern has obligations to New Jersey under New Jersey law. The Spill Compensation and Control Act requires notification of all spills of hazardous substances. This Act, as amended effective in 1979, applies retroactively to all spills that occurred before that date. Under New Jersey law, a site specific program for dealing with PCB contamination ~~is~~ on site will require Department's participation and approval under a consent agreement. We hope that New Jersey's specific and important concerns will not run headlong into conflict with the national master EPA agreement through the 16 states along the pipeline. The company has exhibited to date a willingness to address the potable water issued head-on. We hope that their responsiveness will carry over in the weeks and months ahead as we pursue a comprehensive cleanup of the PCB waste in the West Amwell. Of course, similar long-term programs will have to be pursued in Linden and perhaps if any contamination is observed in Hanover as well.

The timing of your hearing in response to this issue highlights the significance of the matter. As a State, New Jersey felt in a very disadvantaged position when it found out that discussions on the PCB problem had gone on between EPA in Washington and the company for over five years. Of course, that would have been okay, if the bottom line, public health issues had been addressed in part of those discussions. Unfortunately, local site specific issues were not in the forefront of those items discussed. As a result, we have all scrambled over the last several weeks to get a handle on the problem. We hope in the future that problems which involve our state, whether they be TSCA, RCRA or Superfund problems, are handled in the spirit of language which was written in the new Superfund that called for states to be equal partners in the resolution of the serious hazardous substance contamination that may exist.

The lesson that we have learned is that no one individual, entity, or government knows everything about the environmental problems in our state. We have taken the position, as we did yesterday, when we released new information with EPA, that an informed public can absorb new information and overview government actions in a way that is beneficial to all of us. We intend to continue to operate our program in an open and cooperative atmosphere with local residents, local governments, county freeholders and health departments, state legislators and federal government and federal legislators. We trust that we will be afforded the same courtesies in the future.

If you have any questions, I'll be glad to answer them.

ATTACHMENT AWEST AMWELL UPDATE: MARCH 16, 1987

The samples collected on February 28, 1987 were submitted to the EPA's Environmental Services Division laboratory for PCB analysis with the approved method at the detection limit of 0.1 ppb. Upon receipt of the environmental samples representing nine residential wells and the well at the Texas Eastern facility, the laboratory analyzed the samples plus a field blank and a laboratory blank. These blanks are part of the quality control (QC) process used to demonstrate that contamination is not being introduced in the field during sample collection or in the laboratory during the analytical procedure.

After analyzing the blanks and the samples and generating the data, the analyst and three other chemists sequentially reviewed the raw data and the calculations and other quality control information to make sure the data were valid. This procedure completed, the data were released to DEP as Quality Assured Data.

After the data were released to the DEP, an analyst conducting a study to confirm the detection limit of the analytical method in our laboratory obtained results indicating the possibility of laboratory contamination. Because of this observation, the laboratory staff conducted an investigation to determine if there was a source of laboratory contamination.

After checking the glassware and equipment used in these analyses and analyzing ten method blanks, it was determined that there was contamination in the laboratory. It is not possible to discount the possibility that some or all of the positive values obtained for the February 28 sampling were due to laboratory contamination. Using an improved quality control system, the samples from March 6 of the nine homes and the company well showed no PCBs at the detection level of 0.1 ppb. The laboratory staff is currently evaluating data from the laboratory contamination experiments and attempting to further refine a QC system.

The standard protocol for data analysis and reporting when dealing with potential contamination of hazardous materials in drinking water is reconfirmation of the data with a second set of data from samples collected immediately following analytical results indicating contamination of drinking water. Only after the data are confirmed is the process of reporting the data to the public initiated. In the case of positive results, data are given to the Regional contact of the Agency for Toxic Substances and Disease Registry (ATSDR) for an expedited review by the Agency. EPA then releases the data and takes appropriate action.

In the case of the West Amwell PCB drinking water study, an exception was made to the protocol because of the high public concern, the potential endangerment to human health and the length of time the chemicals were available in the environment. The values reported from the laboratory presented the impression that the contaminants were widely dispersed in the ground water above both state and EPA action levels. ATSDR review of the levels of PCBs detected resulted in their recommendation that the residents should not use the water for drinking purposes and that all usage without treatment should be avoided within a four to six week period.

The EPA laboratory had instituted special Quality Assurance/Quality Control (QA/QC) procedures to assure validity of the data. At the time the data were given to the New Jersey DEP, a conscientious decision was made not only to schedule confirmatory testing but also to release the data to the homeowners, the press, public officials and the company. The residents were advised not to use the water for drinking purposes and arrangements with the company were negotiated to supply drinking water directly to the five residences and by a centralized distribution point to other concerned residents.

On March 6, 1987 EPA collected additional sets of samples from the nine original residences and one company well tested on February 28, 1987. This normally would have been the confirmatory sampling round. Samples were taken in the morning and afternoon. The morning samples were analyzed by EPA's Edison laboratory and the afternoon set of samples were sent to an EPA contract laboratory (CLP). Preliminary results from the morning samples were completed by March 16, 1987 and were all non-detect at the 0.1 ppb detection limit.

EPA and NJDEP will perform the following with respect to monitoring the drinking water quality at West Amwell:

1. Obtain third round sampling data (taken afternoon March 6) from the original nine homes and one company well by March 26, 1987.
2. Obtain a fourth round of sampling data for the original nine homes to be collected on March 18, 1987 and to be analyzed by state/EPA laboratories for release within two weeks of collection.
3. Visit and audit labs involved in analyzing drinking water samples for PCBs.
4. Complete analysis of well water from 11 additional residences and two local schools by April 11, 1987.
5. Obtain results of the 50 samples collected on March 14, 1987 by the Hunterdon County Health Department and DEP. Confirmation sampling and analysis will be conducted for any positive results.
6. Collect and analyze additional samples of drinking water wells in accordance with a plan developed under a consent agreement with the company.
7. Assuming no detection of PCBs on all confirmatory analyses, the five homes where a detection level of PCBs was indicated as a result of the February 28, 1987 sampling will be re-analyzed at three and six month intervals. Based upon the results obtained thus far, EPA/NJDEP are advising the five homes to remain on-bottled water until after receipt of the fourth round of sampling mentioned in (2) above.

Results from the CLP are expected March 26 and April 11. If these data also indicate non-detect, then it would be reasonable to assume the water supplies are not contaminated and the bottled water recommendation would be lifted.

Plans will be developed with the company to finalize design and installation requirements of carbon filters. The filters will not be required to be installed unless the fourth round of sampling or any confirmatory sampling efforts indicate PCBs above the 0.5 ppb action level.

EPA/DEP will pursue reimbursement from the company for all prior sampling/analytical costs.

TESTIMONY
OF THE
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
TO
THE UNITED STATES SENATE
SUBCOMMITTEE ON THE SUPERFUND AND ENVIRONMENTAL OVERSIGHT
OF THE
COMMITTEE ON THE ENVIRONMENT AND PUBLIC WORKS
OVERSIGHT HEARING ON
PIPELINE POLYCHLORINATED BIPHENYL (PCBs) DISPOSAL

MARCH 17, 1987

BY:

MARTHA A. MADDEN, SECRETARY
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

AND

DR. JAMES H. BRENT, PROGRAM MANAGER
OFFICE OF SOLID AND HAZARDOUS WASTE

Mr. Chairman, Members of the Committee:

It is our pleasure to appear before you on behalf of the State of Louisiana. We are especially pleased that your committee is taking action to address the issue of Polychlorinated Biphenyl (PCBs) disposal practices and other possible hazardous substances, as they relate to the pipeline industry. One of Louisiana's main concerns is the apparent lack of communication and coordination that existed between the Federal and State regulatory agencies with respect to this issue.

INTRODUCTION

The chronology of the events associated with the disposal of PCBs and hazardous waste in pits by members of the pipeline industry is disconcerting. On August 29, 1985, the Environmental Protection Agency (EPA) was notified by Texas Eastern that pipeline liquids contaminated with PCBs had been disposed in pits at their compressor stations. On April 30, 1986, Texas Eastern provided EPA with the results of a Pilot Site Sampling Program. The data in this report indicated that PCBs were present in a soil boring sample at Texas Eastern's St. Francisville, Louisiana facility at a maximum concentration of 3800 ppm. The test results also indicated, in addition to PCBs, the presence of trace amounts of both volatile and semi-volatile hazardous substances which are regulated by the Resource Conservation and Recovery Act (RCRA).

On July 25, 1986, a generic clean-up and closure plan was submitted to EPA by Texas Eastern. In December 1986, EPA was provided with the results of a systematic sampling and testing program involving fifty-four (54) additional Texas Eastern sites. Five out of the fifty-four (54) were located in Louisiana. The test results for surface soil samples indicated that the Larose, Louisiana facility had the highest concentration of PCB contamination with a maximum value of 48,000 ppm. On February 17, 1987, EPA's Office of Enforcement and Compliance Monitoring formally requested addi-

tional information from Texas Eastern under the provisions of Section 104 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 3007 of RCRA.

On February 22, 1987, Secretary Martha Madden of the Louisiana Department of Environmental Quality (LDEQ) was notified by the local media in Baton Rouge, Louisiana of the presence of PCBs in pits at five sites in Louisiana.

It is fully realized that the regulatory responsibility for PCBs at concentrations of 50 ppm and above rests solely with the Federal government under the provisions of the Toxic Substances Control Act (TSCA). However, Louisiana cannot understand why the fourteen states involved were not notified of the existence of a PCB problem within their boundaries. The presence of RCRA waste in the pit raises additional questions due to the delegation of RCRA authority to the states.

SPECIFIC DETAILS

Since learning of the existence of PCB pits, the LDEQ has taken the lead in the ongoing site investigation and sampling program. On February 23, 1987, the TSCA Office at EPA Region VI was contacted by telephone in an effort to obtain more detailed information regarding the exact location of the sites in Louisiana. Basically, the response was that EPA Headquarters had been dealing with the problem and the Regional Office did not have any specific information.

Early that same morning (February 23, 1987) Mr. Ray A. Barlow, local counsel for Texas Eastern in Louisiana, telefaxed a copy of a letter from Howard C. Homeyer, President of Texas Eastern to Secretary Martha Madden, that explained the situation in brief. That same day it was agreed that a meeting would be held in Baton Rouge on February 25, 1987 between representatives of LDEQ and Texas Eastern. LDEQ, via discussion with Mr. Steve L. Horton, Vice President of Technical Services for Texas Eastern, had established the exact location of the five sites originally noted, plus one

additional site. LDEQ field personnel were dispatched and completed a visual examination of the five sites on February 23, 1987. The one new site located near Opelousas, Louisiana was inspected the following day (February 24, 1987).

The initial visual evaluation of the six Texas Eastern sites indicated that they did not pose an immediate danger. EPA Region VI personnel were advised via telephone, of the findings of these investigations and of LDEQ's intent to examine the sites.

On February 24, 1987, EPA Region VI formally advised LDEQ of the agency's investigation and the fact that to ensure national consistency the case was being managed nationally by EPA Headquarters.

On February 25, 1987, a meeting was held in Baton Rouge, Louisiana involving the following LDEQ and Texas Eastern personnel:

Secretary Martha Madden	LDEQ
Dr. James H. Brent	LDEQ
Ray A. Barlow	Attorney, Shreveport, La., Texas Eastern
Carol E. Dinkins	Attorney, Houston, Texas, Texas Eastern
Steve L. Horton	Vice President, Tech Services, Texas Eastern
Bolivar C. Andrews	Vice President and General Counsel
J. Richard Stoker	Manager, State Relations, Texas Eastern

Texas Eastern personnel presented a historical review of their use and disposal of PCBs, as well as their agreements and involvement with EPA. Mr. Barlow also indicated that Louisiana was the first state to have Texas Eastern's top officials meet with them. During the course of the meeting LDEQ was provided with copies of the "Preliminary Report of Sampling Program at Texas Eastern Compressor Stations", as well as other pertinent documents that were previously submitted to EPA Headquarters.

During the time period from February 25 to March 2, 1987, numerous discussions took place between LDEQ and EPA Region VI staff members. As a result of these

discussions, it was established that LDEQ would take the lead in performing Preliminary Assessment/Site Inspection (PA/SI) activities at the Texas Eastern sites. EPA Region VI agreed to make funding available within the existing cooperative agreements to reimburse the State for all necessary expenditures associated with PA/SI activities. It should be noted that three additional Texas Eastern sites had been identified bringing the total to nine sites.

On March 2, 1987, LDEQ was advised by U. S. Senator John Breaux's office and EPA Region VI that, based on the results of an EPA inquiry of eleven pipeline companies, four additional pipeline companies had indicated that they may have sites in Louisiana. The initial data provided to us by EPA indicated five new sites. However, when the four pipeline companies, ANR Pipeline Co., Transcontinental Gas Pipeline, Columbia Gulf Transmission, and Tennessee Gas, were contacted by LDEQ the number of their facilities in Louisiana with a potential for PCB involvement was determined to be twenty-five (25). The available information regarding the nature of these sites and what types of testing had been done is sketchy. LDEQ is currently planning to make a Preliminary Assessment of these sites in the next three weeks.

On March 5, 1987, a team from LDEQ's Inactive and Abandoned Sites Division embarked on a five day field trip to perform PA/SI's on nine sites owned by Texas Eastern located throughout the state. The nine sites are located in the vicinity of St. Francisville, New Roads, White Castle, Larose, Opelousas, Monroe, Castor, Gillis and Grand Chenier.

The field investigation and sampling effort which was completed on March 10, 1987, did reveal some new significant information that LDEQ was not aware of. During the PA/SI at the Larose facility, it was determined that a second pit was involved. This other pit was located outside the process area and was now part of an impoundment and under at least three feet of water. The main concern with respect to this development was the fact that there was a possibility that the water in the

impoundment could have drained into the waterway adjacent to the impoundment. The visual portion of the PA/SI for the other facilities did not reveal any unusual conditions.

The proliferation of possible PCB sites continued on March 9, 1987, when EPA Region VI advised LDEQ of another seven Texas Eastern facilities. These seven additional sites were apparently identified to EPA by Texas Eastern as part of their original investigation. This investigation ranked sites according to their PCB potential. A three tier relative ranking was used with the sites being classified as "HIGH", "LOW" or "NO" PCB potential. These new sites were reported as falling in the "NO" potential category.

AREAS OF CONCERN

The current situation regarding PCBs and Texas Eastern has raised many questions that need to be addressed.

An examination of data compiled by the Louisiana Department of Natural Resources (LDNR) and the Louisiana Geological Survey indicated that there were a total of forty-three (43) different pipeline companies in Louisiana engaged in the transportation of crude oil. In addition, there were ninety-five (95) different companies listed as natural gas transporters with forty-three (43) of this number classified as intrastate gas lines. To date, LDEQ has been unable to obtain any information as to whether these companies were contacted by EPA regarding their use of PCBs. Currently, LDEQ in conjunction with LDNR is in the process of preparing our own survey forms which will be sent to the companies in Louisiana in an effort to establish the true extent of the PCB problem.

A review of the generic clean-up and closure plan submitted by Texas Eastern did not include any provisions regarding groundwater protection. In Louisiana, State

Statute, R. S. 30:1076(F) prohibits the discharge of hazardous waste into any underground waters of the state. This factor was brought to the attention of Texas Eastern officials during the February 25, 1987 meeting. Louisiana made it very clear, at that time, that a groundwater monitoring system would have to be provided in closure of the pits.

Another issue relates directly to the regulation of PCBs. A brief survey of the twenty-two (22) states who have laws in place regarding PCBs has indicated that nine of the states have regulations above and beyond those imposed by TSCA. Again, no information is available to indicate if this factor was considered by EPA or Texas Eastern.

The majority of the problems noted relate to technical issues. The most disturbing factor regarding this entire matter, however, is the breakdown and lack of communication between EPA and the affected states.

SUMMARY

This incidence has had one beneficial result, it demonstrated that the cooperative agreements currently in place between Louisiana and EPA Region VI are valuable tools that enhances a state's ability to address an immediate environmental problem.

With respect to Texas Eastern, we would like to thank the company for their cooperation. We feel that the company has demonstrated that it is committed to a prompt and satisfactory resolution of the problem.

In conclusion, Louisiana would like to express its appreciation to the Subcommittee for scheduling this hearing and allowing the state to participate.

Testimony of
Jacqueline Nelson
before the
Subcommittee on Superfund and Environmental Oversight
of the
Senate Environment and Public Works Committee

March 17, 1987
Washington, DC

Testimony of
Jacqueline Nelson
before the
Subcommittee on Superfund and Environmental Oversight
of the
Senate Environment and Public Works Committee

Thank you very much for this opportunity to testify. My name is Jackie Nelson. I am the principal of Nassau Christian School in Princeton, New Jersey. Since 1973, I and my family have lived on Queens Road in West Amwell, New Jersey. I am accompanied today by other residents of West Amwell, many of whom have lived in the community longer than I have. We are appearing here today because we are concerned about the PCB contamination that is occurring in the drinking water in our area.

The Facts As We Know Them

On February 22, 1987, an article appeared in the Trenton Times (Appendix A) saying that Senator Dale Bumpers had received information that the Texas Eastern Transmission Corporation had been dumping PCB-contaminated liquids into 77 pits in the ground across the country. I live approximately 1000 feet away from the West Amwell Compressor Station operated by Texas Eastern, the site of one of these pits, so naturally I became interested in this matter and began to inquire further.

During the next three or four days, I phoned many people trying to learn more about the problem. I found that my best sources of information were the aids to Congressman Florio and Senator Lautenberg, and I want to express my thanks to those individuals and to the Congressman and the Senator. The Hunterdon County Health Department (Mr. John Beckley) has been extremely helpful to us. The New Jersey Department of Environmental Protection has also been helpful.

There are several kinds of PCB's (the technical term for these is congeners of PCB and isomers of PCB). Some kinds of PCB's are more toxic than other kinds. Even more important: commercial PCB's are ordinarily contaminated with other chemicals, such as polychlorinated dibenzofurans (PCDF's) and polychlorinated quarterphenyls (PCQ's). These contaminants of PCB's are, in many cases, more toxic than the PCB's themselves.

I must note that in 1970, the U.S. government banned PCB's from pesticides as scientific and medical evidence began to accumulate that PCB's can make animals and people sick. In 1976, the U.S. Congress passed a law forbidding the manufacture of PCB's (the only time in American history the Congress has banned a chemical in a law; the normal way for chemicals to be banned is for an executive agency, such as the EPA, to ban them). In 1976, no one could possibly doubt any longer that PCB's were poisonous. By 1979, the 1976 law became completely effective and PCB's were no longer permitted to be used. But there were old barrels of PCB's around and some companies continued to use up their inventory, rather than destroy it. In 1981, Texas Eastern got word that PCB's had been measured in the natural gas they were delivering to homes in Long Island. Texas Eastern and the U.S. EPA and all state environmental protection agencies knew from this time onward that PCB's were a problem associated with gas transmission lines, and particularly with transmission lines operated by Texas Eastern.

I have learned that Texas Eastern notified the New Jersey Department of Environmental Protection (DEP) about the problem on February 23, 1987, and the company notified Congressmen and Senators February 25. To this day, we, the affected citizens, have NEVER been notified by the company.

When the Federal EPA (Environmental Protection Agency), the DEP, and a county official met at the site, a Texas Eastern employee noted that a tank had been removed from the site and taken to be disposed of at Alabama and Illinois sites. Texas Eastern later admitted that the tank had contained PCB contaminants.

Also, PCB's were apparently burned at this site. According to the Trenton Times article, there were two sites where this took place. David Sharp, a Lambertville resident, called Texas Eastern when Senator Lautenberg was to come meet with the residents. The employee referred to the West Amwell dump site two times as "the old burn pit." Burning PCB's is even more serious than simple PCB contamination as it results in dioxin.

By February 28, Senator Lautenberg visited West Amwell and a week later the Federal EPA took samples of water from nine families' wells. Five days later (on March 5) we learned that five of the nine samples showed PCB contamination. My well is among the five that are known to be contaminated. Fifty-four sites were examined in a report from the Roy Weston Inc. environmental consulting firm, a Texas Eastern initiated report. Of the 54 sites, only eight were found to contain higher levels of contamination than those found at West Amwell.

Since then, additional sampling has been completed but we do not yet have any further results.

Therefore, what we know as of the date of preparation of this statement (March 14) is that our wells are contaminated, that the contamination has extended as much as 1000 feet (or more) from its source, and that the contamination appears to be spreading.

Please note that as a consequence of failures by Texas Eastern and the government agencies, people in West Amwell drank poisoned water for at least five years longer than they should have. The degree of effect has yet to be determined but there are two kinds of toxicity to be aware of: acute toxicity (a single cyanide pill kills you almost immediately) and chronic toxicity (cigarette smoking causes heart disease and emphysema and lung cancer if you smoke for many years).

Texas Eastern has stated that workers never had side effects when subjected to PCB's for long periods of time. It is very difficult to make exact comparisons between workers and the general public. The "general public" includes a much broader spectrum of human characteristics than the segment of the public that reports to work every day. The "general public" includes sick people, old people, school children, babies, and so forth. They may be more affected by a chemical than workers are affected (because workers are generally in pretty good health, are in mid-life, and are often hardier than the average population).

We are now forming a citizens' group so that we can respond to this situation in a coordinated fashion, and so that we can all act in the best interests of ourselves and our community.

What We Want

1. Evaluation

We want the government (federal or state or both) to thoroughly evaluate this problem. We know that PCB's were being put into the ground for many years, and we now know that they have traveled at least 1000 feet underground into the water that people are drinking. We need this problem studied thoroughly. How far has the pollution traveled? How fast is the pollution moving? What direction is it moving? Does its movement change as the season changes? We believe that the pollution is spreading, as evidenced by contamination of our wells, and we need to understand what the future holds for our area. We want a thorough investigation of this problem, using the latest hydrological techniques, so that we understand the situation and can act accordingly. We need to know the extent of the problem, and we need to know whether the contamination can be cleaned up. Is remedial action possible? What would it cost and how long might it take? We need to know the answers to these questions.

One of the results of all this has been that we have developed a deep distrust of the company (Texas Eastern) and of the EPA. We therefore feel that we need some way to independently evaluate all the work that is carried out on this problem in the future. We want our own non-governmental technical advisors, who can help us determine whether the sampling, testing, and analysis is being conducted properly and correctly.

2. Legislation

We want a new law requiring that state agencies and affected citizens be notified whenever the federal EPA becomes aware of a contamination situation, or a potential contamination situation.

We know from articles in the New York Times that the EPA suspected the presence of PCB's in the Texas Eastern pipeline in 1981. (NY Times Jan. 21, 1981, pg. B-9; Feb. 4, pg. B-2; Feb. 8, pg. E-5; see Appendix A of this testimony.)

We want to know why the EPA did not investigate this situation fully in 1981. And, we want to know exactly when the EPA determined that Texas Eastern was the source of the PCB contamination in Long Island in 1981.

We do not know why a thorough investigation was not carried out in 1981, but we know that a new law could remedy the situation. A new law could require that as soon as any federal agency becomes aware of a potentially hazardous situation, the state environmental protection agencies and the affected people have to be notified in writing. This would make it impossible for the EPA to learn about a situation, such as the Texas Eastern PCB situation, and not tell anyone about it.

3. Investigation

We would like an investigation of the actions of the New Jersey Department of Environmental Protection back in 1981 when the New York Times was carrying stories about PCB contamination of natural gas pipelines in New Jersey. The Times, February 8, 1981 (p. E-5) said, "More PCB's (short for polychlorinated biphenyls) were found in the gas lines of four utilities and in the New Jersey portion of the pipeline system that carried gas from Gulf states." (Emphasis added.) Where was the DEP when the Times was carrying these stories? Why has no investigation begun? We need an answer to these questions.

I guess the best way for me to phrase what we want is, "We want to know who knew what when." We want a thorough history of the events that led us to our present situation, so that we can assess blame or innocence correctly.

4. Alternate Water Supply

We want an alternate water supply for drinking and for bathing. People whose water supplies have been contaminated, and people whose water supplies may become contaminated in the future as this pollution spreads, need an alternate water supply, provided by the government, at the polluters expense. This new water supply should be tested periodically (every 60 days or so) to see that it is pure and safe. We are getting bottled water today and Texas Eastern has offered to provide us with charcoal filters to put on our residential water systems. This is adequate for a very short time, but soon we must have a new, uncontaminated water supply.

5. Health Studies

We want two studies: one study of the health of Texas Eastern workers and former workers, and a second study of the health of residents of our area, and former residents of our area. Again we want our own independent non-governmental advisor involved in all aspects of these studies.

We have been told that the pit, into which the PCB's were dumped, was burned periodically. Texas Eastern's own consulting toxicologist, Raymond Harbison from the University of Arkansas, told a public meeting in West Amwell on March 12, 1987, that burning PCB's would produce dibenzofurans. We have also been told that commercial PCB's are often contaminated with dibenzofurans and perhaps with other chemicals as well. We have been told that dibenzofurans and some of these other associated chemicals may be even more hazardous than the PCB's themselves. We therefore want all testing programs to include tests for dibenzofurans as well as PCB's.

6. Compensation

Lastly, we want Texas Eastern to be required to compensate us for the loss of property values that we have suffered. Many of us feel like prisoners on our own property because we know we cannot sell it now. Part of my property had "For Sale" signs on it before this contamination was discovered. I can't possibly sell that property now. It is therefore a loss to me and my husband, and there are many other people in a similar situation. We want compensation from the responsible party or parties.

Thank you again for this opportunity to testify.

Buried chemicals in West Amwell linked to cancer

By FRANK MCGUIRE
Staff Writer

A natural gas pipeline station in West Amwell, Hunterdon County, has been identified as one of 77 locations throughout the country where a small bed of cancer-causing chemicals is buried, officials said yesterday.

The West Amwell compressor station of the Texas Eastern Transmission Corp., on Route 179 just outside Lambertville, is one of two known sites of buried PCBs in New Jersey, according to Fred Wichlep, vice president of Texas Eastern public affairs.

According to reports published yesterday, Texas Eastern acknowledged to federal officials in 1985 it dumped PCB-laden liquids into 77 earthen pits in 12 states, including New Jersey and Pennsylvania.

Texas Eastern has a 10,000-mile major natural gas pipeline network stretching from Texas to Massachusetts.

REPORT of the dumpings led Sen. Dale Bumpers, D-Ark., to call on two Senate panels to investigate what he said is one of the worst cases of willful dumping of cancer-causing chemicals in history, according to yesterday's Washington Post.

Bumpers called for quick scheduling of hearings by the Senate Energy Committee, on which he is a ranking member, and the Senate Environment and Public Works Committee.

The PCBs are "confined, behind fences in covered pits, not bothering anyone if no one bothers them," Wichlep told The Times yesterday.

The PCBs — polychlorinated biphenyls — were in liquids drained from the pipeline at compressor stations, which push natural gas through the pipeline system.

OIL at the compressor stations from 1958 to 1977 was found to contain PCBs after Texas Eastern conducted tests in 1981, Wichlep said during a phone interview from his home in Houston.

The lubricating oil, which Wichlep could not further identify, periodically leaked into the pipeline and mixed with the liquid formed when natural gas condenses due to temperature and pressure changes, Wichlep explained.

Employees periodically drained the liquid from the pipeline and "poured it into the dirt" in the pit, Wichlep said.

There is one pit at the West Amwell station about 10-feet wide and 2 to 3 feet deep, he said.

The other pit in New Jersey is at a compressor station in Linden City, Union County, Wichlep said.

"We don't have any idea in terms of gallons" how much of the liquid may have been dumped at the West Amwell site, Wichlep said.

HE ALSO could not pinpoint a time in the 19-year span when the oil was known to have been used at the West Amwell site.

Wichlep said the pits do not pose a health hazard to station workers, residents or creeks and streams.

"PCBs bind in the sand and do not migrate. These pits are covered up ... and minding their own business, only they have PCBs in them," he said.

Wichlep said there is no danger of rainwater washing the PCBs into nearby creeks or streams.

But in a release from his Washington office Bumpers said "the flagrant disregard for the health and well-being of citizens along the route of the Texas Eastern pipeline is truly shocking and outrageous."

"The potential for groundwater and surface contamination from these pits is enormous," Bumpers said.

New Jersey Department of Environmental Protection officials could not be reached for comment last night.

AT TWO of the pits — exact locations were not disclosed — Texas Eastern employees apparently tried to burn PCBs, leaving residues of highly toxic dioxin, the Post said.

Texas Eastern "has never had a problem traceable to any handling of PCBs" by their employees, Wichlep said.

The pits were not used after 1977, the same year the corporations discontinued using the oil, Wichlep said.

But Texas Eastern later learned the PCBs might have lingered in the pipeline system for an unknown amount of time even though the oil was not in use, Wichlep said.

BUMPERS SAID the reason for the dumping was clear.

"They (Texas Eastern) meant to save money by dumping in homemade pits as opposed to safely disposing of the contaminants in environmentally-safe landfills," he said.

In 1978, the company began dumping the liquid into tanks, which were then disposed of in federally approved landfills, Wichlep said.

Under the Toxic Substances Control Act, EPA has required since 1978 that PCBs be disposed of at regulated landfills or incinerators.

New York Times January 21, 1981, pg. B9.

MEX. WEDNESDAY, JANUARY 21, 1981

L. 139

Traces of PCB's Reported In Gas Lines by 3 Utilities

By PETER KINSS

Traces of a toxic chemical have been found in natural-gas systems by the three New York metropolitan utilities.

But two of the utilities, the Consolidated Edison and Brooklyn Union Gas Companies, said yesterday that the chemical — polychlorinated biphenyls, or PCB's — was trapped at entries for interstate pipeline gas rather than in customer systems.

The other utility, the Long Island Lighting Company, said the PCB's had been found at one such gate in Nassau County, but had also been found in several places in customer systems in Suffolk County — a main in Commack, 11 locations in Sayville and one site each in Centereach, North Babylon and Selden.

No Indication of a Hazard

All three utilities stressed that there had been no indication that the chemical posed a health hazard.

Brooklyn Union has 1.1 million gas customers, Con Edison 1,829,000 and Llico 300,000.

All three utilities said the gas involved came from their major supplier, the Transcontinental Gas Pipeline Corporation. Brooklyn Union also reported finding some of the chemical in gas from the Tennessee Gas Pipeline Company and the Texas Eastern Transmission Corporation, and Con Edison said it had found some in gas from Tenneco.

Spokesmen in Houston for all three pipeline concerns said these were the first such reports for their systems, which have shipped gas from Texas to the Northeast for decades.

Long-term exposure to PCB's has been linked to skin eruptions and liver damage in humans, and to cancer in animal tests, according to the State Health Depart-

ment, which has been conducting joint investigations with the State Department of Environmental Conservation and the Public Service Commission.

The problem appeared last Wednesday, when Llico was informed that a meter in a home in Centereach was clogged by an oily substance. A drip pot installed the next day on the gas line filled a 55-gallon drum with what laboratory tests showed later was lubricating oil that contained PCB's. Llico informed the State Public Service Commission of the findings, and that agency notified the other two utilities, which began their own investigations. Con Edison and Brooklyn Union made their findings on Monday.

From the pipelines, high-pressure gas is decompressed and scrubbed by venturi separators at so-called gates before entering utility distribution systems. Investigators said they were mystified about how the PCB's could get past the scrubbers.

There are two kinds of Federal standards for PCB's.

One limits workers' exposure to one microgram per cubic meter of air in eight hours; state and utility tests have not indicated air contamination so far. The other standard regulates disposal. Any material containing more than 50 parts per million of PCB's must go to a chemical landfill, and anything above 500 must be incinerated. Laboratory analyses of samples so far have given widely varying readings.

In another development, Con Edison said it had discovered the leakage of what it called "a minuscule amount of radiation" from the closed Indian Point 2 nuclear plant into the Hudson River 35 miles north of Manhattan.

Hunt Is On for Source of PCB's in Natural-Gas Lines

By FRANCES CERRA

The discovery last month of a toxic chemical — polychlorinated biphenyls, also called PCB's — in a Long Island homeowner's natural-gas system has led to a nationwide hunt for the source of the pollution.

Spurred by the initial and subsequent findings on Long Island, utilities — including the Consolidated Edison Company, the Brooklyn Union Gas Company, Orange and Rockland Utilities and the People's Gas, Light and Coke Company of Chicago — have found traces of the chemical at points within their systems.

Testing of the Transcontinental Pipeline system, which delivers natural gas from the Gulf states to the New York

area, has yielded positive results in the northern New Jersey part of the system, where the gas is commingled with gas from the Texas Eastern Transmission Corporation company.

In the wake of the findings, the Federal Environmental Protection Agency and the New York State Health Department are developing testing methods for extensive monitoring that will begin soon.

A spokesman for Dr. David Axelrod, the state's Health Commissioner, whose office has directed all the state's gas companies to begin testing as soon as the methods are agreed on, said yesterday that all preliminary test results indicated "no immediate health hazard" from the chemicals found so far.

The spokesman said, however, that the assurance was based on the fact that the levels of PCB's found so far were low, and that only long-term exposure to low levels of the chemical was considered dangerous.

No company involved, except the Texas Eastern Transmission Corporation, has acknowledged using any product that could have put the toxic chemical into the natural-gas distribution system.

Fred Wicklip, a spokesman for Texas Eastern, said that two years ago it stopped ago using lubricating oil containing PCB in compressors along its pipeline.

The company is awaiting results of tests taken along the length of its pipeline

from southern Texas to Staten Island, in New York City, and Mr. Wicklip declined to speculate about whether any of the old oil had somehow been left in the system.

An Environmental Protection Agency regulation effective last May required all oil companies either to stop using PCB-laden oil or to dilute what it was using to less than 50 parts per million.

The Long Island Lighting Company is especially puzzled because almost all 20 cases where the chemical has been found are in the Maplewood housing development in Sayville, on Long Island's South Shore. Lico officials say they are baffled.

The first finding of polychlorinated biphenyls resulted from a complaint to Lico on Jan. 5 that a Centereach home-

owner's heating system would "not work." A repellican who opened the gas service pipe to the house was greeted by a flow of oil that should not have been in the pipe. A company official sent the oil out for analysis.

The analysis yielded the surprising finding of PCB's, which have produced liver cancer in laboratory animals and less serious toxic effects in humans at low levels, such as chloracne, a skin eruption.

Lico officials concluded that no oil product being used by the company contained the substances. Then the company tested oil condensates on the screens of scrubbers at gas stations, where inter-state pipelines join the company system.

The results there were positive also. To date the company has found PCB's at an average concentration of 3,000 parts per million at customer locations. None have been found in the air of any of the customers' homes, and Lico,

like the State Health Department, says that no one's health is being jeopardized.

As a precaution, however, they advised John and Francine Grossman of Sayville to move from their home after the substance was found there, because Mrs. Grossman is pregnant. They are living in a motel.

The other New York-area utilities have found PCB's primarily at scrubbers at their gas stations, but last weekend Consolidated Edison made a preliminary finding of the chemical at a house in Mamaroneck, in Westchester County.

The house was tested after a customer complained that oil was leaking from the gas meter.

In Chicago, the regional office of the Environmental Protection Agency checked a gas station of the People's Gas, Light and Coke Company after reports of the findings in the East, and found a level of 230 parts per million.

The Region

In Summary

More Mysteries And Perils in the Environment

Environmentalism may have gone out of style, but environmental problems have not. Consider three that have just cropped up in the region.

• Though it was supposed to be a secret, many people at the Tonawanda Air Products Company in Tonawanda, N.Y., knew that in the 1940's workers at the plant were involved in the Manhattan Project, which led to the atomic bomb. What they didn't know was that when the work was finished, the company and the Army dumped more than 37 million gallons of radioactive waste into shallow wells on the site. According to a report by a New York State Assembly task force, the wells were chosen precisely because any waste poured down them was impossible to trace.

The dumping at Tonawanda was just one of the "environmental crimes" uncovered by the task force during a 15-month investigation of pollution in the Niagara Falls area. Last week, the company, now part of the Union Carbide Corporation, agreed to examine the wells and begin an epidemiological study of all those who worked in the plant.

• For the last month, PCB's, industrial chemicals linked to cancer, have been turning up in the natural gas systems of homes on Long Island. More PCB's (short for polychlorinated biphenyls) were found in the gas lines of four utilities and in the New Jersey portion of the pipeline system that carries the gas from Gulf states.

Authorities still aren't sure where the chemicals are coming from. One possible source is Texas Eastern Transmission Corporation, which said that until two years ago it had used lubricating oil contaminated with PCB's in compressors along its pipeline. So far the levels of PCB's found on Long Island are too low to be considered dangerous, but one expectant mother and her family were moved from their Sayville home to a motel.

Testimony of
Esla Bynoe-Andriolo
Representing
The New Jersey Environmental Federation
before the
Subcommittee on Superfund and Environmental Oversight
of the
Senate Environment and Public Works Committee

March 17, 1987
Washington, DC

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Members of the Committee, ladies and gentlemen, thank you for this opportunity to present testimony today on this important matter. My name is Esla Bynoe-Andriolo and I am a member of the steering committee of the New Jersey Environmental Federation, whom I am representing today. I am also the chairperson of the Environmental Commission of Jersey City, New Jersey, where we are currently engaged in a massive fight to clean up enormous quantities of chromium wastes dumped at many locations throughout the city by careless corporations. I mention this situation in Jersey City to emphasize for you--and for the people of West Amwell--how important it is for citizens to get together to solve these pollution problems.

I first became involved with a major source of contamination in Jersey City several years ago. It was the PJP landfill, a 75-acre landfill in Jersey City that had been on fire for more than 20 years. The sickly smoke from that landfill poured into the air of Jersey City year after year and no government agencies intervened. The U.S. Environmental Protection Agency could not help us put out that fire. The New Jersey Department of Environmental Protection could not help us put out that fire. Finally, a few citizens got together and formed the PJP Landfill Task Force and we began to focus attention on that burning landfill and the pollution it was pouring into the air we breathed in Jersey City. We began to publicize the problem. We wrote letters, we held rallies, and we spoke to the press. Slowly but surely we began to get action. With help from Senator Lautenberg and from other concerned individuals, we finally convinced the government agencies to spend \$18 million dollars to hire a special fire-fighting team to come in and put out that fire. And today the fire is out. It was a great victory for the people of Jersey City and I want to thank Senator Lautenberg for the role he played in that victory. But most important, I want to emphasize that it was citizens getting together to solve a common problem that turned the tide.

The fight over the PJP landfill led the citizens of Jersey City to create an Environmental Commission. Now that the Environmental

Commission exists, we are looking at other dangers to the health of the people of Jersey City, which has led us to our present concern over chromium wastes dumped in the past throughout the city.

My purpose in recounting this history is to emphasize how important it is for people to band together into an organization and fight for their right to a clean and healthful environment. We are here today to talk about a contamination situation in West Amwell, New Jersey, and I want the people of West Amwell to know that they are not alone in their fight for a clean, healthful environment. All across New Jersey, people have been impacted by careless corporate dumping of toxics. That is why we have worked hard in recent years to create the New Jersey Environmental Federation--to make it easier for people to work together to solve their local problems. By sharing information with each other, and lending a hand to each other, each of us is strengthened in the fight.

What is the New Jersey Environmental Federation?

The New Jersey Environmental Federation is a membership organization made up of groups and individuals focused on a broad spectrum of problems affecting the environment of New Jersey. We are an action-oriented organization working to improve environmental quality in New Jersey. Our work over the past two years has been focused on enforcement of existing environmental laws, and we have also worked for strengthening of existing laws. In this regard, we would like to offer our thanks to Senator Lautenberg for his excellent record on environmental legislation. His record clearly makes him one of the outstanding leaders in the U.S. Senate and we are grateful to the Senator for his leadership and for his hard work on behalf of the environment of New Jersey (and, indeed of the entire United States).

The Subject of This Hearing

The subject of this hearing is the community of West Amwell, New Jersey, where within the past three weeks it has been learned that substantial contamination of groundwater had occurred because one company (and perhaps others) dumped PCBs into a pit in the ground.

We read conflicting stories in the New York Times and in local newspapers, so we are not yet sure of all the facts, but it appears to be true that one or more natural gas pipeline companies have been using PCB-contaminated lubricating oil in their compressor stations. One company in particular, Texas Eastern Transmission Company, has evidently been dumping PCB-contaminated wastes into a pit in the ground, without regard to the environmental consequences. We are not certain when this dumping began, or when it ended. We read in the newspapers that it covered a period at least 10 years long and perhaps 20 years long, from the mid-1950s to the mid-1970s.

We do not know the quantities of PCBs that have been dumped into the pit over this 10-to-20-year period, but we believe it has been substantial because drinking water wells more than 1000 feet from the pit have recently been discovered to be contaminated with PCBs. At least

five wells have been found contaminated, and more testing is being conducted by state and federal agencies now.

In a sense, this is "just another" typical pollution situation: a community going about its business is suddenly told that they are drinking water that fails to meet public health standards.

But this situation is somewhat different because the federal and state agencies had a warning six years ago. In Appendix A to this testimony I am attaching photocopies of stories that appeared in the New York Times in January and February, 1981, discussing the discovery of PCBs in use at compressor stations in northern New Jersey. The Texas Eastern Transmission Company was the subject of these investigations, so it is clear that the federal EPA knew this company was using PCBs in 1981. PCBs had been outlawed in 1979, so their appearance in Texas Eastern's pipeline in 1981 should have been investigated thoroughly. Evidently, such an investigation was not conducted. As a result of this failure by the federal agency, the people of West Amwell, and the people who work for Texas Eastern at the West Amwell Compressor Station, have been needlessly exposed to PCBs. The Texas Eastern company bears the principal responsibility for the contamination, but the government also must be held accountable for its failure to follow through and investigate a situation that they knew existed six years ago.

We do not want to debate the dangers of PCBs. The U.S. Environmental Protection Agency has reviewed the medical studies of PCBs and has established an allowable limit for PCBs in drinking water that is very strict: 0.9 parts per billion (ppb). This strict standard (less than one part per billion) tells us that government health officials have great respect for the potential of PCBs to cause harm in humans.

We can see no justification whatever for the continued exposure of workers and community residents to PCBs. Attached to my testimony as Appendix B is a bibliography listing 113 studies that have shown PCBs to be toxic to humans, rats, mice, monkeys and other forms of life.

What We Recommend

We believe that the most important thing that has to happen is that the community of West Amwell must stick together and see this thing through. It is the citizens--including the citizens who work for Texas Eastern--who are affected by this contamination, and it is the citizens who hold the key to the solution. If the citizens relax, or allow themselves to be divided, the problem will be allowed to get worse.

We believe the polluters should be required to pay for all subsequent actions that are made necessary by the pollution. In other words, from here on in our testimony, whatever we recommend should be paid for by the company, even when we recommend that the government take steps. It should not be up to the taxpayer, or the victims of the pollution, to pay for remedies. We must reaffirm the principal that the polluter must pay.

- (1) The Texas Eastern property, which is believed to be the source of

the PCB contamination, must be gone over with a fine-tooth comb, looking for PCB-contaminated soil. Even if it takes an army of people taking samples, the entire site should be analyzed, the sources of the trouble pinpointed, and then--and only then--the sources of the problem should be cleaned up. The government should be anticipating many lawsuits against this company and should gather evidence now about the sources of the PCB contamination, should document those sources rigorously, and then should immediately remove the sources of the contamination.

(2) The government should establish a continuing program for testing the water in West Amwell. Every well that has been affected, and every well that might be affected, should be tested every 60 days; testing should be done by a company (or companies) selected by the affected homeowners and approved by the New Jersey Department of Environmental Protection, but all testing should be paid for by the responsible party. This testing program should continue until no PCBs are detectable in wells in West Amwell for three consecutive years.

(3) The federal and state governments, together, should investigate the facts of this case and should make a thorough report to the American people. We believe the Attorney General of the United States and the Attorney General of New Jersey should become involved in these investigations because the U.S. Environmental Protection Agency and the New Jersey Department of Environmental Protection themselves seem to bear partial responsibility for the situation. As I said earlier in my testimony, the government had hard evidence in 1981 that Texas Eastern and other companies were using PCBs and they failed to conduct a thorough investigation then. We are particularly concerned that this company, and other gas transmission companies, knew in 1981 (and probably before 1981) that they had been dumping PCBs into the ground in New Jersey and in 11 other states. We believe there may have been an illegal conspiracy between these companies to hide information about the contamination. If this is true, then the laws against conspiracy (the so-called RECO laws) should be brought to bear on these companies and criminal sanctions should be applied.

(4) The investigation of these matters should include the question, What other toxic chemicals besides PCBs have Texas Eastern and the other gas transmission companies been using over the years? Are they still using any toxic chemicals today? If they are using toxic chemicals today, where are the toxic residues going?

The investigation should also include an evaluation of the exposure of workers to PCBs over the years. Workers and former workers for the Texas Eastern company should be examined (on a voluntary basis, of course) for PCB contamination.

(5) The investigation of this situation should include an extensive geological and hydrological evaluation, so that a team of competent hydrologists can develop a thorough understanding of the groundwater in the affected area, and in the area that might be affected as time passes and the PCB contamination spreads. This may mean an extensive program of

drilling of new wells. The aim of this program should be to map the existing pollution in detail and to develop sufficient understanding to allow prediction of the path and speed of the spreading pollution. The pollution starts in certain locations and it had spread to other locations today. Where will it be tomorrow? The citizens of West Amwell need a detailed and reliable answer to that question.

(6) Although carbon filtering systems on peoples' drinking water systems may be useful as an immediate, temporary solution to the problem of PCB contamination of drinking water, the only acceptable long-term solution is for the people of West Amwell to be given a new, clean water supply. This should be provided by Texas Eastern, under government surveillance. The new water supply should be tested every 60 days for contamination (as part of our recommendation No. 2 above).

(7) We want the Texas Eastern Company to pledge today that it will open its records to state and federal investigators and that it will keep the citizenry thoroughly apprised of the developing situation;

(8) We want a pledge from state and federal officials that they will continue working rapidly and aggressively on this problem until it is remedied and until the responsible parties have been brought to justice;

(9) Lastly, we ask Senator Lautenberg and other members of the Committee to look closely at existing communication mechanisms between state and federal agencies, and between the government and the citizenry. When one agency (state or federal) learns of a contamination situation, why isn't there a foolproof communication channel whereby all other relevant agencies and affected citizens are immediately notified? Why isn't there a computerized data bank of pollution events so that all agencies--and the general public--have access to the same data in a timely fashion?

If we learn nothing else from this unfortunate event in West Amwell, we should learn that poor communication between government agencies, and between the government and the citizenry, can lead to extensive contamination, property damage, and perhaps health damage. This is one area that the United States Senate could remedy, to prevent the development of future situations such as the one in West Amwell.

Thank for this opportunity to testify.

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April 9, 1987

Honorable Frank R. Lautenberg
 Chairman, Subcommittee on Superfund
 and Environmental Oversight
 U. S. Senate Committee on Environment
 and Public Works
 Washington, D. C. 20510-8175

Dear Mr. Chairman:

Submitted herewith are my responses, under oath, to your inquiries set forth in your letter to me of March 27, 1987 regarding the involvement of the Interstate Natural Gas Association of America in the Environmental Protection Agency's remediation program to resolve the problem of PCB concentrations in natural gas pipeline condensates.

If you or the Committee desire any further information, please do not hesitate to let me know.

Yours truly,

Jerome J. McGrath
 Jerome J. McGrath
 President

JJM:bag

Enclosure

RESPONSE OF
 JEROME J. MCGRATH, PRESIDENT
 INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
 TO LETTER INQUIRIES OF
 HON. FRANK R. LAUTENBERG, CHAIRMAN
 SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL OVERSIGHT
 UNITED STATES SENATE COMMITTEE ON
 ENVIRONMENT AND PUBLIC WORKS
 DATED MARCH 27, 1987

Question 1. Describe INGAA's involvement in the development of a national program, under EPA's compliance and enforcement authorities, to reduce the concentration of PCB's in natural gas pipeline condensates below the 50 ppm level. Include the names and titles of INGAA and member company officials and the names of EPA staff who participated with you in that effort. Include, also, the dates of any meetings at which INGAA representatives and member company and EPA officials were present and include the purpose of such meetings.

Response 1. Although INGAA was aware of a PCB problem in Long Island and that a few members were already testing pipelines for PCBs, our involvement commenced with a request from Mr. Kenneth A. Williams, Director, Pipeline and Producer Regulation, Federal Energy Regulatory Commission (FERC), to me for a meeting on January 27, 1981 at the Commission to discuss this matter. The meeting was held as requested and the following were in attendance to the best of my recollection:

Ken Williams - FERC	Mike Woods - EPA
Louis Mendonsa - FERC	Lawrence Ogden - INGAA
Richard Hoffman - FERC	Jerome McGrath - INGAA
John Seitz - EPA	

Concern was expressed about PCBs and a nationwide testing program was decided as the best approach to determine the extent of any problem. INGAA agreed to participate and cooperate in all aspects of the program.

A second meeting was held three days later on January 30, 1981 at FERC to formulate with FERC, EPA and industry representatives a plan for the testing nationwide and implementation. A list of the attendees is attached (Enclosure 1). From this point forward I, personally, did not attend any other meetings on PCBs, and INGAA was represented by Mr. Lawrence J. Ogden of my staff, who kept me fully informed.

On February 4, 1981 a meeting at FERC again with EPA and industry was held and industry executives presented maps of their company's system indicating the locations where they intended to sample condensate for testing. These

along with the protocol for testing procedures, laboratories approved for analysis, split sampling for correlation of results and reporting procedures were among the subjects discussed. A list of the attendees is attached (Enclosure 2).

During this meeting it was decided that the reporting procedure would be directly from the companies to EPA. INGAA, specifically Mr. Ogden, was to be the coordinator of the program for the interstate pipelines between the EPA and the INGAA members. Enclosures 3 through 9, attached, reflect INGAA's involvement in coordinating emplacement of the program between the industry and EPA.

Since the February 4, 1981 meeting, there have been no other joint FERC, EPA, industry meetings of which I, or my staff, are aware. There have been individual company meetings with the EPA. Mr. Ogden has visited EPA headquarters on several occasions but in general almost all contact has been telephonically or via correspondence. I do not have personal information on any specific dates a member company may have met with EPA nor do I recall the exact dates of Mr. Ogden's few meetings with EPA staff, except for the meeting referenced in Enclosure 9.

Mr. Ogden has informed me his last visit to EPA was in November 1986 with personnel from Algonquin Gas Transmission Company (Mr. Ray Kane, Executive Vice President, Mr. Frank Jackson, Manager, Compression Department, and Pat Hester, Attorney) discussing the marking of a tank at a compressor station. They met with Mr. Mike Wood, and Mr. Michael Calhoun of EPA. Earthen pits were not discussed. Prior to this meeting Mr. Ogden had not seen any EPA personnel involved in this program for 2-3 years although occasional telephonic communication was had.

Although INGAA's role was to act as coordinator, in actuality, as the testing program evolved, the companies dealt directly with EPA. INGAA staff, however, attempted to keep abreast of the efforts being made and, when necessary, acted as the "go-between" between EPA and member companies. See attached Memorandum dated February 15, 1984 (Enclosure 9).

Question 2. At any meetings between EPA staff and INGAA member companies at which INGAA personnel were present, was there any mention of earthen disposal pits into which the PCB contaminated liquids would be placed?

Response 2. To the best of my knowledge earthen disposal pits were never mentioned in any meeting where INGAA and EPA or other personnel were present.

Question 3. From any conversations or documentation between EPA and INGAA personnel relevant to the establishment of the PCB contaminated condensate remediation program, was it the understanding of INGAA representatives that the placement of such condensate into unpermitted earthen pits constituted compliance with the PCB Rule, TSCA and/or the remedial program?

Response 3. There was never an understanding, directly or indirectly, either in conversation or documentation, that the placement of contaminated condensate into unpermitted earthen pits constituted compliance with the PCB rule, TSCA and/or the remedial program. Enclosure 3 is my cover Memorandum of February 2, 1981 to our Membership of Mr. Ogden's Memorandum to the Construction & Operations Committee of the same date. I believe Mr. Ogden's Memorandum clearly indicates INGAA's position pertaining to compliance with regulations. Attached to Enclosure 3 is a list of the Members of INGAA to whom the Memorandum was sent and the then current committee rosters for the Legal, Construction & Operations and Environmental Committees and PCB Points of Contact who received this information. It should be stated the PCB Points of Contact are those listed on the sheet with that title plus the full Construction & Operations Committee.

Question 4. The manufacture of lubricating oil containing PCB's, which were used by your industry in its compressors, was discontinued in 1972. Are you, or any of your staff, aware of individual company practices to:

- a. discontinue use and/or the removal of such oils from member company storage throughout its system upon the cessation of manufacture,
- b. phase out the use of such PCB contaminated lubricating oil by drawing down on inventory over a period of time,

Response 4 a&b. I have no knowledge of individual company practices for discontinuance of use, removal or phase out of such oils. Such actions are individual company judgments/decisions on how compliance should be achieved. Mr. Ogden states he is aware that one company dispatched its staff environmentalist to every company installation to inventory and assure compliance for proper disposal of PCB and other companies may well have done the same. However, we do not know how INGAA member companies handled their procedures for disposal.

Question 5. Did you, or any member of INGAA staff, advise Texas Eastern Gas Pipeline Company, or any other company, that the use of earthen pits by which to dispose of waste oils and condensates containing PCB's was an acceptable

practice under the PCB Rule or the condensate remediation program, or that the practice was illegal but, "if you do it, don't get caught?"

Response 5. No one from INGAA advised Texas Eastern Gas Pipe Line Company or any other company that the use of earthen pits to dispose of waste oils and condensates containing PCB's in any form was an acceptable practice. In fact, in preparing this response I have carefully gone through our records with Mr. Ogden and nowhere in those files was earthen pits mentioned. I believe Enclosure 3, page 2, PCB Regulation, of Mr. Ogden's February 2, 1981 Memorandum references compliance clearly and indicates our position and attitude toward compliance with the applicable laws and regulations.

No one at INGAA has ever said to any member company, "If you do it, don't get caught." I believe the attached enclosures will fully demonstrate, as I have stated above, that it was and always has been our intent that the PCB disposal program of the industry be carried out in accordance with all pertinent EPA requirements.

ATTESTATION:

I hereby certify that the information set forth in the above responses to the questions asked by Hon. Frank R. Lautenberg in his letter of March 27, 1987 is true and correct to the best of my knowledge, information and belief.

Jerome J. McGrath

City of Washington, D.C.)
District of Columbia) ss

Subscribed and sworn to before me this 9th day of April, 1987.

Janice D. Ames
Janice D. Ames, Notary Public

My Commission Expires Jan. 31, 1991

FERC - EPA - INCAA
1-30-81

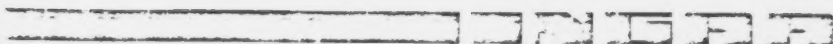
<u>NAME</u>	<u>REPRESENTING</u>	<u>LOCATION</u>
RC BONNER	MICH GAS STORAGE	JACKSON, MICH.
RICHARD SIOWELL	CITIES SERVICE GAS	OKLA. CITY
BILL YOUNG	UNITED GAS PIPE LINE	HOUSTON
PAUL FOX	~~UNITED GAS PIPE LINE~~ TEXAS GAS	HOUSTON
CLIF WILLIAMS	TEXAS EASTERN GAS PIPELINE CO.	HOUSTON, TEXAS
FL. Cohagan	✓	✓
Willard Henry	✓ Texas Eastern	✓ Houston, Texas
LOUIS W. MANDONSON	Federal Energy Regulatory Comm.	WASH. D.C.
DONALD K. HART	FERC	WASH. D.C.
PAUL HUBBARD	FERC	" "
LARRY SAUTER	FERC - Environmental	" "
Richard Hoffmann	" "	" "
Kenneth A. Williams	FERC	" "
W. T. TURNER, JR.	TEXAS GAS / INCAA	CINCINNATI, OH.
L. Caden	INCAA	WASH. D.C.
Jerome J. McGrath	INCAA	WASH. D.C.
Joseph A. Spatola	USEPA REG II	NEW YORK, N.Y.
Bobby Lambert	UNITED GAS P.L.	HOUSTON
Thomas E. Jacobs	Texas Gas Pipeline	Houston, Tx.
J. Laraine Cross	A.G.A.	Arlington, Va.
ALBERT BRACE	A.G.A.	WASHINGTON, D.C.
Leonard Fish	A.G.A.	Wilmington, DE.
Arthur GEVINTZ	EPA REG II	EDISON, N.J.
John S. Seitz	EPA HDQ OR	WASH
Mike Wood	EPA HDQ OR	WASH
J.C. McELROY	TRANSCO	HOUSTON
J.C. Boehm	"	"

ATTEND-EE-EPA-FERC Working Meeting

Hearing Room 6 FERC 2/4/81

Name	Organization	Address
William Young	Texas Eastern	Houston, Tex
St. O. J. F. B.	TEXAS GAS RIGHTS	Lewistown, Pa
G. T. Behr	Mich Gas Storage	Jackson Mich
FL. Cohagan	Texas Eastern	Houston, Tx.
M. J. L. TERRACE	TEXAS EASTERN	HOUSTON, TX
Joseph Spatola	US-EPA-Reg II	New York, NY
Thomas E. Jacobs	Tenn. Gas Pipeline	Houston, Tx.
Chris. A. Falkenhagen	" " "	"
Mike Young	EPA	Washington
JERRY PAUL SMITH	TRANSCO GAS P/L	HOUSTON, TX
Dean F. Hill	EPA, NEIC	Denver, CO
LARRY OGDEN	INGAA	D.C.
MARY E. McDONNELL	EPA	Washington
TERRY ROEMILLER	NATURAL GAS PIPELINE C. OF AMERICA	JOULET, ILL
Louis W. Mendonca	FERC	WASHINGTON
R. D. H. H. H.	FERC	WASHINGTON
S. Lorraine Cross	A.G.A.	Arlington, Va
Howard Fish	A.G.A.	Arlington, Va
HUGH BRADY	AGA	Arlington, Va
Robert Welch Jr	Columbia Gas Serv.	Wilmington, De
W. E. Almquist	Columbia Gas Trans. Corp.	Charleston, W. V
W. H. A. H. H.	Tennessee Gas Pipeline	Houston, Tx
L. J. SAUTER, JR.	FERC - Environmental	WASH., D.C.
Bob ARVEDLUND	FERC	Wash., D.C.
Mike Wood	EPA - HQ	WASH. D.C.

Encl. #2



INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
1812 STREET, N.W., WASHINGTON, D.C. 20036

February 2, 1981

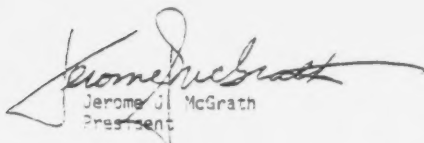
MEMORANDUM TO MEMBERS

The enclosed memorandum from Larry Ogden to INGAA's Construction and Operations Committee reports on a recently enacted effort for sampling and testing of condensates in natural gas pipeline systems to determine the presence of PCBs. As the memo states, PCB was recently discovered in a home gas meter on Long Island Lighting Company's system and subsequently at other locations in the New York area. Also, some PCB was detected in the Chicago area on the Peoples Gas Light and Coke system.

We have joined in a cooperative program with the EPA, FERC and AGA to commence a testing program nationwide. To this end, a task group of the C & O Committee was appointed last week consisting of:

W. T. Turner, Texas Gas Transmission Corp., Chairman
C. Falkenhagen, Tennessee Gas
F. L. Conahan, Texas Eastern
J. Boehm, Transco
W. Almquist, Columbia Gas
D. Lutz, Natural Gas Pipeline
R. Jones, Michigan Wisconsin Pipeline

We have had two meetings with EPA and FERC representatives, and as Colonel Ogden's memorandum indicates, we have been cooperating fully in the testing program. We will keep you advised of any new developments.


Jerome J. McGrath
President

JJM:brs

Enclosure

cc: Legal Committee

INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
1000 STREET, NEW YORK, NEW YORK 10001-1000

February 2, 1981

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE

Re: Cooperative Program Regarding the Possible Presence
of PCB In Natural Gas Pipelines

SUMMARY

In mid-January, polychlorinated biphenyls (PCB) were found in natural gas transmission and distribution systems in the New York City area. PCBs are toxic chemicals which are regulated under the Toxic Substances Control Act (TSCA) administered by the U.S. Environmental Protection Agency (EPA). Although the source of the PCB is still uncertain, it is suspected that its presence stems from a residual buildup of the PCBs that were used in the systems over many years. Because of the potential for human and environmental exposure and our interest in resolving what might be a serious problem, INCAA and AGA, at the request of FERC and EPA's Office of Enforcement, have joined in a cooperative program to determine if there is PCB elsewhere in gas systems and to initiate remedial actions where necessary.

BACKGROUND

The existence of PCB was first discovered by the Long Island Lighting Company when analysis of a substance clogging a home gas meter showed varying levels were present. Other local utilities were notified, and samples taken from their lines showed varying levels of PCB. At EPA's request, Texas Eastern, Tennessee Gas, and Transcontinental, whose pipelines provide the gas for the local utilities in the New York City area, have been taking and testing samples of their condensate. Some early results indicate some PCB presence.

To determine the potential health impact of the situation, the New York Department of Environmental Protection has been taking air samples in homes using natural gas. Preliminary results indicate that no levels of PCBs above the time-weighted National Institute of Safety and Health criteria for workplace air are present in the homes.

Results from EPA's Region V in the Chicago area show PCB presence there also. This suggests the situation may exist elsewhere.

PCB REGULATION

Regulations governing the manufacturing, processing, distribution in commerce, use, marking, storage, and disposal of PCBs are found at 40 CFR 761. Several provisions of these regulations are particularly relevant to the situation that may exist with regard to natural gas lines.

Under the regulations, lubricants containing PCB compounds could not be used after May 1, 1980 (see Section 761.3.(i)). The use of such lubricants in gas compressors before then may be responsible for the PCB presence now being found.

Disposal of PCBs must be undertaken in accordance with the PCB regulations at 40 CFR 761.10. In general, liquids that contain a PCB concentration of more than 500 ppm must be disposed of in an EPA approved incinerator (Section 761.10(a)(1)). (EPA has just approved two incinerators for the disposal of PCBs: Rollings Environmental Services' Deer Park, TX; ENSCO in Eldorado, AK.) The regulations also contain specific requirements governing the disposal of liquids containing a PCB concentration of between 50 and 500 ppm (Section 761.10(a)(4)). Any questions concerning the proper disposal of PCB should be directed to the Regional EPA office. It should be noted that any uncontrolled discharge of PCBs constitutes disposal, as defined by the regulation.

COOPERATIVE EFFORTS

To develop and implement a program to determine the extent of any problems which may exist and to take such remedial action as may be needed, a national committee of Federal Agency officials and pipeline and utility representatives has been established. Federal Agency members are representatives of the Pesticides and Toxic Substances Enforcement Division of EPA's Office of Enforcement which has responsibility for ensuring compliance with PCB regulations and the FERC which has technological expertise in natural gas transmission and may have relevant regulatory authority. Our industry is represented by AGA and INGAA.

The first goal of the national committee is to determine where PCB may be located and to what extent it is present in the major gas transmission pipelines.

A national sampling plan is being developed in which sampling points will be identified based upon major marketing areas and pipeline exchanges. The results of analysis from condensate samples drawn from these points will indicate whether and to what extent PCB is present.

The presence of PCB can occur from either the operation of major transmission pipelines or from the local gas utility distribution systems. The EPA regional offices are being asked to establish committees similar to the national committee with representatives of State Utility Commissions, local utilities and other state agencies as appropriate so that sampling efforts for gas distribution lines can also be coordinated. A program of this type has already been established in EPA's Region II in response to the New York situation.

In the cooperative program, local utilities will be asked to take samples from the spur lines near the transmission line sampling points that are found to contain PCBs so that it can be determined if the PCB is being transmitted to the distribution lines. They will also be asked to sample from other points within their systems to determine if PCB is present.

In order to obtain an accurate picture of the extent and amount of PCB present in gas lines, it is essential that all sampling and analysis for PCB in gas, oil, and air be done using the same prescribed techniques and methodologies. EPA is developing standard methodologies that will be used by all participating parties in the program. In addition, EPA will develop and implement a quality assurance program to ensure the validity of results received from EPA, company, and contractor laboratories performing the PCB analyses. EPA is also examining the destruction rate of PCB as a result of combustion to see if there would be a potential health hazard should PCBs be found in the natural gas. EPA recommended sampling and testing techniques have been received and will be reviewed by the joint committee this week.

Our association has been working very closely with the Environmental Protection Agency in developing this cooperative program. Its success depends largely on the full cooperation of our members in seeing that the needed sampling is performed, and that it is accomplished in accordance with the standard methodologies being developed by EPA.

Enclosed for your information is a list of the EPA Regional Gas Coordinators.


Lawrence J. Ogden
Director, Construction
and Operations

LJO/jed
Enclosure

cc: Environmental Committee

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 — Black Marlin Pipeline Company —
 — Cities Service Gas Company
 — Colorado Interstate Gas Company
 — The Columbia Gas System, Inc.
 — Consolidated Natural Gas Service Co., Inc.
 — Continental Resources Company
 — The El Paso Company
 — ENSERCH Corporation
 — Great Lakes Gas Transmission Company
 — Kansas-Nebraska Natural Gas Co., Inc.
 — Locust Ridge Gas Company —
 — Michigan Gas Storage Company
 — Michigan Wisconsin Pipe Line Company
 — Mid Louisiana Gas Company —
 — Mississippi River Transmission Corp.
 — Natural Gas Pipeline Company of America
 — Northern Natural Gas Company
 — Northwest Pipeline Corporation
 — Pacific Gas Transmission Company
 — Panhandle Eastern Pipe Line Company
 — Ringwood Gathering Company —
 — Southern Natural Gas Company
 — Tarpon Transmission Company —
 — Tennessee Gas Transmission Company
 — Texas Eastern Transmission Corp.
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ENCLOSURE 4



INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
1460 L STREET N.W. • WASHINGTON, D.C. 20036 • 202 293-5770

February 3, 1981

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE

Re: Cooperative Program Regarding the Presence of PCB
in Natural Gas Pipelines

The INGAA Memorandum of February 2, 1981, subject as above, provided background and a status report of the cooperative efforts of the industry, EPA and FERC.

Additionally on the same subject (PCB) but unrelated to the cooperative efforts, EPA has a separate testing program for PCB presence on lubricants utilized in compressor stations. This has confused some when they are aware of a joint cooperative committee developing standard testing and analytical procedures for condensate and an EPA inspector arrives to test their lubricants.

Enclosed for your information is a list of laboratories that are known to have PCB analysis capability.

Lawrence J. Ogden
Director, Construction
and Operations

LJO/ed

Enclosure

cc: Environmental Committee

January 30, 1981

The companies on this list are known to have PCB analysis capability. Appearance on this list does not represent an endorsement by the Environmental Protection Agency. Suggested analytical procedures will be distributed the week of February 2, 1981.

Acurex Corporation
Mountain View, Ca

Agri Science Laboratories Inc.
West Los Angeles, Ca

Am Test
Seattle, Wa

Analytical Research Labs., Inc
Monrovia, Ca

Brown - Caldwell Environmental Services
Emeryville, Ca

California Analytical
San Deigo, Ca
Sacramento, Ca

EC Jordan
Portland, Me

Energy Resources Company, Inc.
Cambridge, Ma

Engineering Science Inc.
Berkeley, Ca

ERG
Ann Arbor, Mi

Environmental Scientific Services
Gainesville, Fl

Gallob Analytical Services
Brooklyn Hts., N.Y.

General Electric
Medford, Ma
Philadelphia, Pa

Continued

)
Gray Laboratories
Kansas City, Ks

GSA Corp.
Bedford, Ma

Hagger Laboratories
Denver, Co

Hazelton Laboratories
North Brook, Il

Huser Laboratories
Boulder, Co

Industrial Laboratories
Denver, Co

JTC Environmental Consultants, Inc.
Bethesda, Md

Lancaster Laboratories
Lancaster, Pa

Lauck's Laboratories
Seattle, Wa

LFE Environmental Analysis Laboratories
Richmond, Ca

Mead Technology Laboratories
Research Triangle Park, N.C.

Morning Star Laboratories Inc.
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Pacific Environmental Services
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Raltech
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Continued

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Sverdrup/ARO
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Systems Science & Software
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Truedale Laboratory
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Twining Laboratories Inc.
Fresno, Ca

Ultrachem Corp.
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Myrtle, Or

Versar
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West Coast Technical Services (WCTS)
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Wilson Laboratories
Salina, Ks

Woodson - Tennant
Memphis, Tn
Knoxville, Tn

*Southern Petroleum Laboratories
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*Clayton Environmental Consultant Laboratories
Southfield, Michigan

*Stomer Laboratory
Santa Clara, California

* Added by Industry

INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
3401 LAFAYETTE AVENUE, SUITE 1000, DENVER, COLORADO 80202

February 4, 1981

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE & OTHER MEMBERS

Re: Cooperative Program Regarding the Possible Presence of PCB in
Natural Gas Pipelines

Enclosed for your use are the following:

1. The PCB Sampling Procedures.
2. The Quality Assurance Program for the Laboratories
(and member companies).
3. Method of Analysis for the Laboratories performing
analysis.

These procedures were referred to in the INGAA Memorandum of February 2, 1981.

Reporting Procedures for testing results are being developed with EPA and
will be forwarded next week (February 9th).

A list of Laboratories known to have PCB analysis capability was forwarded
to you by the INGAA Memorandum of February 3, 1981.

It is important that Enclosure 3--Method of Analysis be forwarded soonest
to laboratory(s) who will be performing analysis for your company. Ques-
tions pertaining to the procedures and techniques of this enclosure should
be directed either by the member company or the performing laboratory to:

Dean R. Hill
Environmental Protection Agency
Box 25227, Building 53
Denver, Colorado 80225
Tele: (303) 224-3751

-2-

Additionally, please forward to INGAA by February 11th, the name(s) and mailing address of the laboratory(s) your company will be utilizing. These will be forwarded to the EPA for use in the Quality Assurance Program. Note: This may be telephoned to my Secretary - Janice Deichert (202) 293-5770.

As part of the Quality Assurance Program each laboratory performing analysis(es) for member company(s) are to send one split of a sample to Dean Hill at the above address. Individual member companies may split and forward to Dean Hill the sample themselves at the sampling point, if they so desire. This, then, would be in lieu of their analyzing laboratory making the split.

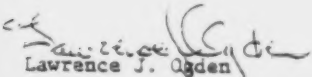
For informational purposes of the involved laboratories, "Referenced Standards" are available from:

Randall R. Watts
Quality Assurance Coordinator
HERL MD-69
U.S. Environmental Protection Agency
Research Triangle Park,
North Carolina 27711
Tele: (919) 541-3951

It is emphasized procurement of Reference Standards is not mandatory and in no way should delay initiation of the program.

As part of the Sampling Procedure (Enclosure 1), INGAA was to assign to each member company an identification number and forward this information to EPA. Your company has been assigned number _____.

The EPA Regional Directors will be advised of the foregoing and it is recommended member companies continue cooperation where appropriate.


Lawrence J. Ogden
Director, Construction
and Operations

LJO/jed
Enclosures

cc: Environmental Committee (w/o enclosure)

February 2, 1981
Page 1 of 3

QUALITY ASSURANCE PROGRAM FOR PCB ANALYTICAL LABORATORIES ANALYZING
CONDENSATE AND OTHER SAMPLES FOR NATURAL GAS TRANSMISSION COMPANIES

BACKGROUND

This overall Quality Assurance (QA) program has been developed for laboratories analyzing samples from natural gas transmission companies in order to determine the presence and concentration of PCBs in condensate or other samples. The purpose of this plan is to check individual laboratory proficiency and ensure comparable results while placing a minimal burden on the transmission companies and private testing laboratories. This QA plan may be revised in the future depending upon the performance of the various commercial laboratories and changes in the original sampling plan. This QA program encompasses five features:

- (1) Method validation
- (2) On - going QC for sample analysis
- (3) Split sample analysis
- (4) Check sample analysis
- (5) Individual laboratory QA programs

METHOD VALIDATION

EPA has supplied INGA with a method for analysis of PCBs in condensate and other oil type samples such as compressor lube oils and hydraulic fluid. The Agency feels that this method, "The Analysis of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils", is the best available method for the expected sample matrices that will be encountered. If other methods of analysis are used they must be validated.

Methodology must be validated by analyzing a series of standards and spiked samples to determine recovery, reproducibility, and linearity of response. At least four samples of the PCB and matrix of interest should be spiked at 10 times the detection limit. To be valid the minimum recovery should be 80%. The detection limit should be 1 ppm.

February 2, 1981
Page 2 of 3

ON - GOING QC FOR SAMPLE ANALYSIS

The following represents the minimum QC steps to be taken for each batch of samples analyzed. All QC results should be reported with associated sample results.

- ° A true duplicate (separate sample weighings) will be performed for at least one of every 20 samples or once per each sample batch if there are fewer than 20 samples in a batch.
- ° Reagent blanks should be performed for at least each batch of samples analyzed or whenever a new container of reagent or solvent is utilized.
- ° Ten percent of all samples that show no detectable PCBs should be spiked with 10 ppm of Aroclor 1242 and 1260 respectively and rechromatographed to demonstrate no loss of PCBs due to matrix effects or faulty chromatography.
- ° Linearity of standard response should be established at least daily for PCBs of interest (Aroclor 1242 and 1260). Standard response values should always bracket sample response.
- ° Spike sample recovery should be run once per batch or once per every 20 samples.

SPLIT SAMPLE ANALYSIS

For this sampling program at least 5% of the samples will be split for re-analysis by an EPA designated laboratory. At least one sample from each transmission company and each laboratory will be split for re-analysis. EPA will also re-analyze or review the chromatographs of problem samples or samples showing questionable results. The laboratory, the company, and INGAA will be notified of the results of the re-analysis by EPA.

CHECK SAMPLE ANALYSIS

An EPA laboratory will prepare at least one sample with a known amount of PCBs for analysis by each laboratory used by the transmission companies. The results will be supplied to INGAA for distribution to its individual member companies and their laboratories as appropriate.

INDIVIDUAL LABORATORY QA PROGRAMS

Transmission companies should be provided individual laboratory QA programs informing them of the individual laboratory's QA procedures. If this information is not in writing the transmission company should, at a minimum, have their chemists discuss the laboratory's QA program with the laboratory in question before contracting for services. Items covered should include:

- o Description of how samples and standards are received, documented, transferred, and stored.
- o Description of instrument operation, calibration, and maintenance.
- o Description of preparation procedures for reagents, standards, and samples.
- o Description of analytical QC procedures used in day to day operation.
- o Description of means to minimize contamination of low level (less than 50 ppm) PCB samples from high level PCB samples.
- o Description of how the above mentioned activities are supervised and monitored as to validity within the laboratory.

February 2, 1981
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PCB SAMPLING - PHASE 1:

CONDENSATE FROM INTERSTATE NATURAL GAS TRANSMISSION LINES

SAMPLE CONTAINERS

- ° Glass sample bottles must be used; PCBs will absorb into plastic.
- ° Caps used on bottles should be lined with teflon as other materials may contaminate the samples or may dissolve in PCBs.
- ° New sampling bottles should be used. At least one empty bottle (blank) from each batch used for sample collection, or a minimum of one per company, should be analyzed in order to certify that sample bottles are not contaminated.

SAMPLE VOLUME

- ° A sample volume of at least 100 ml if possible should be collected. This large sample volume is required in order to implement a check sample and split sample QA program. It is recognized that this may not always be possible.
- ° At least of 10 ml of condensate or other liquids (hydraulic fluid, lube oil etc.) should be collected. Again, it is recognized that even this amount may not be available in which case as much condensate as possible should be obtained.
- ° A minimum of 2 ml must be obtained for analysis. If this amount is not present, another sampling point should be used.

SAMPLE COLLECTION

EPA does not presently have the technical expertise to recommend standard techniques for sampling of gas pipeline condensate. Initial indications from the various transmission companies are that condensate may be collected at many different points each of which may require a different sampling technique. For this reason sampling techniques for condensate will rely on the on - site judgment of gas company experts. The following general sampling techniques may be adapted if applicable:

- ° Hexane rinsed glass tubing can be used to collect representative samples from drums, barrels, pits, or tanks used to collect condensate. Plastic tubing may not be used.

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- o A dip sample may be collected using a glass bottle. The sample should then be transferred to a separate sample bottle for shipment to the lab.
- o If possible, samples may be collected directly from lines used to carry the condensate to collection drums, pits or tanks.
- o If condensate is not homogeneous further samples of the various phases should be collected if possible. If a water phase is obviously present in the condensate sample, additional sample(s) of only the oil or sludge phase(s) should be collected if possible.
- o Care should be taken to avoid cross contamination of samples. If glass tubing or dip bottles are used to collect samples, these should only be used for collection of one sample at each location.
- o Care should be taken to ensure that the outside of the sample bottles and caps are not contaminated during sampling. If the outside of bottles are contaminated this may pose a hazard those handling the container and may contaminate laboratory surfaces.

SAMPLE IDENTIFICATION

Each sample should be accurately and completely identified. Proper sample identification is necessary to: avoid confusion, facilitate reporting results, and facilitate split sample and check sample analysis. A label or tag affixed to each sample should uniquely identify that sample as to the location and date it was collected. The following format will be used to identify each sample collected:

COMPANY NUMBER - SAMPLING POINT - SAMPLE NUMBER - DATE - SAMPLE TYPE

In order to maintain confidentiality of the samples, each company's identification number will be assigned by INGA. This number would be known only to INGA, the company, and EPA. The companies should also assign a unique number to each sampling location on their system and supply these to INGA and EPA. Sample types (normally this will be condensate) should be recorded using the following scheme: condensate = C. Other sample type codes will be supplied by EPA as needed.

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Examples of this identification scheme for samples of condensate and compressor lube oil collected on 2/3/81 at sample point 2 of XYZ Company's system (Co. #6632) are:

6632 - 2 - 1 - 2/3/81 - C and 6632 - 2 - 2 - 2/3/81 - L

After 12 samples are collected throughout XYZ's system another condensate sample is collected at sample point 2 on 2/28/81. This would be identified as:

6632 - 2 - 13 - 2/28/81 - C

COLLECTION REPORT

In order to collect as much information as possible during sample collection the following data should be recorded when samples are collected:

- o Sample identification code (as described above)
- o Time of sampling
- o Name of sampler
- o Names of others present at sampling
- o Lab analyzed by
- o Sampling method description
- o Sketch of sampling point
- o Approximate volume of sample
- o Description of sample (f.e. amber colored homogeneous condensate or multi - phase sample with water, oil, and sludge phases)
- o Estimate of amount of condensate at time of sampling (f.e. 10 gallons in collection tank)
- o Other observations as appropriate

A suggested sample collection form to record this information is attached.

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SAMPLE SHIPMENT

EPA does not have definitive information on the chemical make up of condensate from natural gas pipelines. It is assumed that the condensate will be flammable and DOT regulations concerning the shipment of these types of samples should be complied with. Other shippers such as UPS also have specific requirements for hazardous material shipment which should be complied with. Note: Samples should be iced and kept cold to prevent vaporization.

SAFETY

- o All applicable safety precautions routinely taken by each company for working on their gas transmission systems should be followed in collecting samples. All pertinent federal, state, or local safety regulations should be complied with.
- o Disposable protective gloves should be worn while collecting samples.
- o Appropriate protective clothing should also be worn when sampling in order to avoid contamination of clothing and shoes.
- o A respirator should be worn if the sampling situation or applicable safety regulations require this.
- o Protective eye covering should also be worn when sampling.

PCB BAN RULE REQUIREMENTS

- o Samples found to contain 50 ppm or greater PCBs must be stored and ultimately disposed of in accordance with the PCB Ban Rule (sections 761.42 and 761.10)
- o Sampling equipment (i.e. glass tubing or bottles) and disposable protective clothing worn while sampling should also be stored and ultimately disposed of in accordance with the PCB Ban Rule unless analytical results show these materials were not contaminated. That is a glass bottle used to collect a sample which contained only 12 ppm PCB would not have to be stored or disposed of in accordance with the Rule.

SAMPLE COLLECTION FORM (For Company's Use)

DATE: _____

TIME: _____

SAMPLE IDENTIFICATION NUMBER: _____

SAMPLED BY: _____

OTHERS PRESENT: _____

LAB TO ANALYZE: _____

DESCRIPTION OF SAMPLING METHOD: _____

APPROXIMATE VOLUME OF SAMPLE: _____

DESCRIPTION OF SAMPLE: _____

ESTIMATE OF AMOUNT OF CONDENSATE AT SAMPLING POINT: _____

OBSERVATIONS: _____

SKETCH OF SAMPLING POINT:

METHOD OF ANALYSIS

No standard method is presently available for the analysis of PCBs in condensate from natural gas pipelines. At this time, the EPA believes the most appropriate method of analysis for this matrix is the proposed analytical method developed by EPA's Office of Research and Development for determination of PCBs in transformer fluid and waste oil. This method is attached.

Several EPA laboratories are currently evaluating additional clean up steps which may be needed to resolve interference problems associated with sulfur from odorizers added to natural gas. Any additional clean up procedures developed will be forwarded as soon as possible. As sampling and analysis is carried out during this program, EPA will make available similar technical expertise to resolve any other unique interference problems which may be encountered. This assistance will include re-analysis of samples by EPA laboratories.

If a laboratory utilized during this program chooses to use a different method of analysis, the other method(s) must be validated as outlined in the QA program for this effort.

Questions, problems, and comments concerning the EPA method should be directed to Dean Hill of EPA's National Enforcement Investigations Center Laboratory in Denver, Colorado at 303 - 234 - 3751.

THE ANALYSIS OF POLYCHLORINATED BIPHENYLS IN
TRANSFORMER FLUID AND WASTE OILS

1. Scope

- 1.1 This method is applicable in the determination of commercial mixtures of polychlorinated biphenyls (PCBs) in transformer fluids and certain other hydrocarbon based waste oils. If individual isomers are known to be present, the method can be used to analyze waste oils for chlorinated biphenyls from monochlorobiphenyl through decachlorobiphenyl.
- 1.2 The detection limits are dependent upon the complexity of the sample matrix and the ability of the analyst to maintain the entire analytical system. Using a carefully optimized instrument, this method has been shown to be useful for the detection of commercial PCB mixtures spiked into transformer fluid over a range of 5.0 to 500 mg/Kg. Based upon a statistical calculation at 5 mg/Kg for a simple oil matrix, the method detection limit for Aroclors[®] 1221, 1242, 1254, and 1250 is 1 mg/Kg.¹
- 1.3 This method is recommended for use only by analysts skilled in the analysis of trace quantities of organic compounds by gas chromatography.

¹At a 99% assurity that a measurement made at 1 mg/Kg will not be zero.

2. Summary

- 2.1 The sample is diluted on a weight/volume basis so that the concentrations of each PCB isomer is within capability of the gas chromatographic (GC) system (0.01 to 10 ng/ μ l).
- 2.2 The diluted sample is then injected into a gas chromatograph for separation of the PCB isomers. Measurement is accomplished with a halogen specific detector which maximizes baseline stability and minimizes interferences normally encountered with other detectors. The electron capture detector (ECD) can normally be substituted for the halogen specific detector, when samples contain high percent chlorine PCBs or when the matrix does not interfere with the PCBs. Several cleanup techniques are provided for samples containing interferences. A mass spectrometer operating in the selected ion monitoring mode of data acquisition may also be used as the GC detector.
- 2.3 The concentrations of the PCBs are calculated on a mg/Kg basis, using commercial mixtures of PCBs as standards. The total analysis time is approximately 35 minutes/sample.

3. Interferences

- 3.1 Qualitative misidentifications are always a potential problem in gas chromatographic analysis. The use of a halogen specific detector and the analyst's skill in recognizing commercial PCB chromatogram patterns minimizes this possibility.
- 3.2 Whenever samples are analyzed that do not provide chromatographic patterns nearly identical to standards prepared from commercial PCBs, the analyst must confirm the presence of PCBs by analysis after column cleanup, analysis on dissimilar gas chromatographic columns or by gas chromatography/mass spectrometry (GC/MS).

3.3 During the development and testing of this method, certain analytical parameters and equipment design were found to affect the validity of the analytical results. Proper use of the method, requires that such parameters or design be used as specified. These items are identified in the text by the word "must." Anyone wishing to deviate from the method on these operations, must demonstrate that the deviation does not affect the validity of the data. Alternative test procedure approval must be obtained through the EMSL-CI Equivalency Program. An experienced analyst may make modifications to parameters or equipment identified by the term "recommended" as long as the data obtained are equivalent to or better than that obtained with the method as presented in Section 12, under Single Laboratory Accuracy and Precision. Formal approval is not required, but documented comparable data must be on file as part of the overall quality assurance program.

3.4 When samples diluted 100:1 are analyzed with the electron capture detector, the resulting data will normally be 10 to 20% lower than the true value (Section 12). This is due to detector sensitivity quenching associated with the coeluting paraffins. The degree of error is matrix dependent and is not predictable for samples of unknown origin. As the PCB concentration approaches within 20 percent of an EPA controlled value, the analyst should routinely reanalyze the sample using a halogen specific detector or determine the actual electron capture recovery by spiking the duplicate sample at 2 times the electron capture observed value and then reanalyzing Section 10.3. In this manner the true value of the sample can be determined for otherwise questionable samples.

4. Apparatus

4.1 Gas Chromatograph - The GC should be programmable, equipped with on-column injection for 1/4 inch glass columns, and have automatic column flow controllers.

4.2 Gas Chromatographic Detector

4.2.1 A halogen specific detector is used to eliminate misidentifications due to non-organohalides which commonly coelute with the PCBs.

- a. A carefully optimized Hall Model 700-A electrolytic conductivity detector (HED), which is available from Tracor, has been tested and found to provide the sensitivity and stability needed to measure down to 5.0 mg/Kg of Aroclors 1221, 1242, 1254, and 1260, with a relative standard deviation of less than six percent.
- b. Other halogen specific detectors, including older model electrolytic conductivity detectors and microcoulometric titration, may be used. However, the stability, sensitivity, and response time of these detectors may raise the method detection limit and adversely affect peak resolution. Each system must be shown to be operating within requirements of the PCB regulations by collecting single laboratory accuracy and precision data and method detection limits on simple spiked samples. The resulting data should be similar to that shown in Section 12.
- c. Semi-specific detectors such as ECD may be substituted whenever sample chromatographic patterns closely match

those of the standards. Acid cleanup must be used routinely when the ECD is substituted for the halogen specific detector. See Section 3.4 for additional quality control associated with the use of the ECD.

- d. Quantitative GC/MS techniques can be used and the recommended approach is selected ion monitoring (SIM). The GC/MS data system must have a program that supports this method of data acquisition. The program must be capable of monitoring a minimum of eight ions, and it is desirable for the system to have the ability to change the ions monitored as a function of time. For PCB measurements several sets of ions may be used depending on the objectives of the study and the data system capabilities. The alternatives are as follows:

Single ions for high sensitivity	154, 188, 222, 256, 292, 326, 360, 394
Short mass ranges which may give enhanced sensitivity depending on the data system capabilities	149-155, 182-188, 216-222, 252-258, 298-294, 322-328, 356-364, 390-398
Single ions that give decreased sensitivity but are selective for levels of chlorination (1).	190, 224, 260, 294, 330, 362, 394

The data system must have the capability of integrating the abundances of the selected ions between specified limits, and relating integrated abundances to concentrations using the calibration procedures described in this method.

4.3 Gas Chromatographic Columns

4.3.1 The GC columns and conditions listed below are recommended for the analysis of PCB mixtures in oil. When these conditions are not adequate to resolve the PCBs, the analyst may vary the liquid phase, loading level, solid support, mesh range, column length, ID and operating temperatures in order to provide the required resolution. The columns and conditions selected must be capable of adequately resolving the PCBs in the various Aroclor mixtures so that the parent Aroclor is identifiable. See Figures 1 through 5 to establish this. To properly use the calculation procedure described in Section 11.4, the analyst must use the methyl silicone column described in 4.3.2. Capillary columns and their associated specialized injection techniques are acceptable alternatives to the recommended packed columns. Because of problems associated with such equipment, the analyst must generate and have on file adequate precision and accuracy data to demonstrate that each capillary column system used provides data equivalent to that shown in Section 12.

4.3.2 Recommended primary analytical column: Glass tubing, 1/4 inch O.D., 3 mm I.D., 6 feet long, packed with 3% OV-1 on 100/120 mesh Gas-Chrom Q.

Carrier gas: 40 to 60 ml/minute.

Temperature Program: 120°C isothermal for 2 minutes, 6/minute to 220°C and hold until all compounds elute.

Figure 6 shows a chromatogram of the PCB locator mixture analyzed under these conditions. Each PCB peak has been identified by assigning the same relative retention times determined in the isothermal runs Figures 1 through 5.

Isothermal Operation:

Aroclor^R 1221, 1232, or C1₁ through C1₄ isomers 140°C

Aroclor^R 1242, 1254, 1250, 1252, 1258, or C1₃ through C1₁₀ isomers 170°C

- 4.3.3 Recommended confirmatory column: Glass tubing 1/4" O.D., 3 mm I.D. 6 feet long, packed with 1.5% OV-17 + 1.95% QF-1 on 100/120 mesh Gas-Chrom Q.

Carrier gas: 40-60 ml/minute

Column temperatures:

Aroclor^R 1221, 1232, or C1₁ through C1₄ isomers-170°C

Aroclor^R 1242, 1254, 1250, 1252, 1258, or C1₃ through C1₁₀ isomers-200°C.

- 4.4 Volumetric flasks - 10 and 100 ml
- 4.5 Pipets - 0.10 ml, 1.0 ml, and 5.0 ml, Mohr delivery (for viscous oils cut off tip of pipet).
- 4.6 Micro syringes - 10.0 µl
- 4.7 Sample containers - 20 ml or larger screw-cap bottles with Teflon faced cap liners.
- 4.8 Chromatographic column (clean-up) - Chromaflex 400 mm long x 19 mm ID (Kontes K-420540-9011 or equivalent).
- 4.9 Gel Permeation Chromatograph - Analytical BioChemistry Laboratories, Inc. GPC Autoprep 1002 or equivalent.

4.10 Kuderna-Danish (K-D) Apparatus

4.10.1 Concentrator tube-10 ml, graduated (Kontes K-570050-1025 or equivalent). Calibration must be checked. Ground glass stopper (size 19/22 joint) is used to prevent evaporation of extracts.

4.10.2 Evaporative flask - 500 ml (Kontes K-57001-0500 or equivalent). Attach to concentrator tube with springs. (Kontes K-662750-0012).

4.10.3 Snyder column - three-ball macro (Kontes K503000-0121 or equivalent).

5. Reagents and Materials

5.1 Pesticide grade mixed hexanes, isooctane acetonitrile, methylene chloride, cyclohexane, and diethylether.

5.2 Column packings (recommended)

5.2.1 3% OV-1 on 100/120 mesh Gas Chrom Q

5.2.2 1.5% OV-17 + 1.95% QF-1 on 100/120 mesh Gas Chrom Q.

5.3 Standards

5.3.1 Aroclors^R 1221, 1232, 1242, 1016, 1254, 1260, 1252, 1268

5.3.2 1-Chlorobiphenyl, 2-Chlorobiphenyl, and decachlorobiphenyl

- 5.3.3 Pure individual PCBs as identified in the sample by mass spectrometry or indicated by retention data.
- 5.3.4 Alumina (Fisher AS40) or equivalent
- 5.3.5 Silica gel, Davison Grade 950 or equivalent
- 5.3.6 Florisil, PR grade or equivalent
- 5.3.7 Sulfuric acid A.C.S.
- 5.4 Standard Stock Solutions - Prepare primary dilutions of each of the Aroclors^R or individual PCBs by accurately weighing approximately 0.01 g $\pm$.0001 g of material. Dissolve and dilute to 10.0 ml with isooctane or hexane. Calculate the concentration in $\mu\text{g}/\text{ul}$. Store the primary dilutions at 4°C in 10 to 15 ml narrow-mouth, screw-cap bottles with Teflon^R cap liners. Primary dilutions are stable indefinitely if the seals are maintained.²
- 5.5 Working Standards - Prepare working standards similar in composition and concentration to the samples by mixing the individual standard stock solutions. Dilute the mixture to volume with pesticide quality hexane. Calculate the concentration in ng/ul as the individual Aroclors^R or as the individual PCBs. Store dilutions at 4°C in 10 to 15 ml narrow-mouth, screw-cap bottles with Teflon cap liners. These secondary dilutions can be stored indefinitely if the seals are maintained².

² The validity of primary and secondary dilutions must be monitored on a quarterly basis by analyzing EMSL-GI quality control check samples.

- 5.6 Quality Control check sample - Prepare a quality control check sample by spiking a PCB-free oil, typical of the matrix normally analyzed, at 50.0 mg/Kg (i.e. transformer oil) with a PCB mixture typical of those normally found in the samples (i.e. Aroclor^R 1260 at 50.0 mg/Kg).
- 5.7 PCB Locator Mixture - Prepare a PCB locator mixture containing 0.1 ng/ μ l of 2-chlorobiphenyl, 0.1 ng/ μ l 3-chlorobiphenyl, 0.5 ng/ μ l Aroclor^R 1242, 0.5 ng/ μ l Aroclor^R 1260, and 0.2 ng/ μ l Aroclor^R 1268 in hexane (0.1 ng/ μ l of decachlorobiphenyl can be substituted for Aroclor^R 1268). Use the chromatogram generated by this mixture to identify the retention times of the various PCBs commonly found in commercial PCB mixtures.
6. Sample Collection and Handling
- 6.1 Sample containers should have a volume of 20 ml or more and have Teflon^R lined screw caps.
- 6.2 Sample Bottle Preparation
- 6.2.1 Wash all sample bottles and seals in detergent solution. Rinse with tap water and then distilled water. Allow the bottles and seals to drain dry in a contaminant free area. Then rinse seals with pesticide grade hexane and allow to air dry.
- 6.2.2 Heat sample bottles to 400°C for 15-20 min or rinse with pesticide grade acetone or hexane and allow to air dry. ~~should specify~~
- 6.2.3 Seal and store the clean bottles until use.
- 6.2.4 For re-use, rinse used bottles and seals 3 times with hexane. Air dry, then proceed to 6.2.1.

6.3 Sample Preservation - The samples should be stored in a cool, dry, dark area until analysis. Storage times in excess of 4 weeks are not recommended for unknown or undefined sample matrices.

6.4 Sample Collection

6.4.1 Fill a large container (i.e. 500-ml beaker) from a representative area of the sample source (if practical, mix the sample source prior to sampling).

6.4.2 Fill a minimum of two sample bottles approximately 80% full from the sampling container.

7. Dilution and Analysis

7.1 The approximate PCB concentration of the sample may be determined by X-ray fluorescence, microcoulometry, density measurements, or by analyzing a very dilute mixture of the sample (10,000:1) according to 7.4.

7.2 For samples in the 0 to 100 mg/Kg range, dilute 100:1 in hexane.

7.2.1 Pipet 1.0 ml of sample into a 100.0 ml volumetric flask using a 1.0 ml Mohr pipet (for viscous samples, cut the capillary tip off the pipet). Dilute to volume with mixed hexanes. Stopper and mix.

7.2.2 Using the same pipet as in 7.2.1, deliver 1.0 ml of sample into a tared 10 ml beaker $\pm .0001$ g. Reweigh the beaker $\pm .0001$ g to determine the weight of sample used in 7.2.1.

7.2.3 As an alternative to 7.2.1 and 7.2.2, weigh approximately 1 gram $\pm .0001$ g of sample in a volumetric flask and dilute to 100.0 ml in hexane.

//

- 7.2.4 Analyze the diluted sample according to 7.4 or store the diluted sample in a narrow-mouth bottle with a Teflon^R lined screw-cap.
- 7.3 For samples above 100 mg/Kg in concentration, dilute 1000:1 in hexane.
- 7.3.1 Pipet 0.10 ml of sample into a 100.0 ml volumetric flask using a 0.10 ml Mohr pipet. Dilute to volume with mixed hexanes, stopper and mix.
- 7.3.2 Using the same pipet as in 7.3.1, deliver 0.10 ml of sample into a tared 10 ml beaker $\pm$.0001 g. Reweigh the beaker to determine the weight of sample used in 7.2.1.
- 7.3.3 As an alternative to 7.3.1 and 7.3.2, weigh approximately 0.1 gram $\pm$.0001 g of sample and in a 100 ml volumetric flask dilute to 100.0 ml in hexane.
- 7.3.4 Analyze the diluted sample according to 7.4 or store the diluted sample in a narrow-mouth bottle with a Teflon^R-lined screw-cap.
- 7.3.5 If the concentration of PCBs is still too high for the chromatographic system, prepare secondary dilutions from 7.3.1 or 7.3.3 until acceptable levels are obtained.
- 7.4 Analyze the sample by injecting the hexane mixture into the gas chromatograph using the solvent flush technique (2).
- Note: When semi-specific detectors are used, acid cleanup (See Section 3.1) must be routinely incorporated into the analysis scheme prior to injection.
- 7.4.1 Recommended injection volumes: Halogen specific detection - 4 to 5 μ l, electron capture detector-2 to 3 μ l.

- 7.5 If the resulting chromatogram shows evidence of column flooding or nonlinear responses due to excess sample, further dilute the sample according to 7.3.5.
- 7.6 Determine whether or not PCBs are present in the sample by comparing the sample chromatogram to that of the PCB locator standard Section 5.7.
 - 7.6.1 If a series of peaks in the sample match the retention times of PCBs in the PCB locator standard, attempt to identify the source by comparing individual chromatograms of the standards prepared from commercial mixtures of PCBs Section 5.5. Proceed to Section 11.
 - 7.6.2 If the sample contains a more complex mixture of PCBs, proceed to Section 11.4.
 - 7.6.3 If a 1000:1 or higher dilution ratio sample was analyzed and no measurable PCB peaks were detected, analyze an aliquot of sample diluted to 100:1.
 - 7.6.4 If several PCB interference problems are encountered or if PCB ratios do not match standards, proceed to Section 8, use alternate columns, or use GC/MS to verify whether or not the nonrepresentative patterns are PCBs.
3. Cleanup - Several tested cleanup techniques are described. Depending upon the complexity of the sample, one or all of the techniques may be required to resolve the PCBs from interferences.
 - 8.1 Acid Cleanup
 - 8.1.1 Place 5.0 ml of concentrated sulfuric acid into a 40 ml narrow-mouth, screw-cap bottle. Add 10.0 ml of the diluted

sample. Seal the bottle with a Teflon-lined, screw-cap and shake for 1 minute.

8.1.2 Allow the phases to separate, transfer the sample (upper phase) to a clean narrow-mouth, screw-cap bottle. Seal with a Teflon-lined cap.

8.1.3 Analyze according to Section 7.4.

8.1.4 If the sample is highly contaminated, a second or third acid cleanup may be employed.

8.2 Florisil Cleanup

8.2.1 Place a 20.0³ gram charge of Florisil, activated at 130°C, into a Chromaflex column. Settle the Florisil by tapping the column. Add about 1 cm of anhydrous sodium sulfate to the top of the Florisil. Pre-elute the column with 70 to 80 ml of mixed hexanes. Just before the exposure of the sodium sulfate layer to air, stop the flow. Discard the eluate.

8.2.2 Add 2.0 ml of the undiluted sample to the column with a 2.0 ml Mohr pipet. (For viscous samples, cut the capillary tip off the pipet.) Add 225 ml of mixed hexanes to the column. Carefully wash down the inner wall of the column with a small amount of the hexane prior to adding the total volume. Collect and discard the first 25.0 ml.

³ Batch-to-batch variances for these materials may affect the elution volume of the various PCBs. For this reason, the elution volume of solvent required to completely elute all of the PCBs must be verified by the analyst. The weight of adsorbent can then be adjusted accordingly.

8.2.3 Collect exactly 200 ml of mixed hexanes eluate in a 200-ml volumetric flask. All of the PCBs must be in this fraction.

8.2.4 Using the same pipet as in 8.2.3, deliver 2.0 ml of sample into a tared 10 ml beaker for $\pm .0001$ g. Reweigh the beaker to determine the weight of the cleaned up sample diluted to 200 ml.

8.2.5 Analyze the sample according to Section 7.4.

8.3 Alumina Cleanup

8.3.1 Adjust the activity of the alumina by heating to 200°C for 2 to 4 hours. When cool, add 3% water $\frac{\text{W}}{\text{V}}$ $\frac{\text{W}}{\text{V}}$ (wt/wt) and mix until uniform. Store in a tightly sealed bottle. Reactivate weekly.

8.3.2 Place a 50.0 gram^3 charge of alumina into a Chromaflex column. Settle the alumina by tapping. Add about 1 cm of anhydrous sodium sulfate. Pre-elute the column with 70 to 80 ml of mixed hexanes. Just before exposure of the sodium sulfate layer to air, stop the flow. Discard the eluate.

8.3.3 Add 2.5 ml of the undiluted sample to the column with a 5.0 ml Mohr pipet. (For viscous samples, cut the capillary and off the pipet.) Add 300 ml of mixed hexanes to the column. Carefully wash down the inner walls of the column with a small volume of mixed hexanes prior to adding the total volume. Collect and discard the 0 to 50 ml fraction.

8.3.4 Collect exactly 250 ml of the mixed hexanes in a 250.0 ml volumetric flask. All of the PCBs must be in this fraction.

- 3.3.5 Using the same pipet as in 3.3.3, deliver 2.5 ml of sample into a tared 10 ml beaker $\pm .0001$ g. Reweigh the beaker to determine weight of sample diluted to 250 ml.
- 3.3.6 Analyze the sample according to Section 7.4.
- 8.4 Silica Gel cleanup.
- 8.4.1 Activate silica gel at 135°C overnight.
- 8.4.2 Place a 25 gram³ charge of activated silica gel into a Chromaflex column. Settle the silica gel by tapping the column. Add about 1 cm of anhydrous sodium sulfate to the top of the silica gel.
- 8.4.3 Preelute the column with about 70 to 80 ml of mixed hexanes. Discard the eluate. Just before the exposure of the sodium sulfate layer to air, stop the flow.
- 8.4.4 Add 2.0 ml of the undiluted sample to the column with a 2.0-ml Mohr pipet. (For viscous samples, cut the capillary tip off the pipet.)
- 8.4.5 Wash down the inner wall of the column with 5 ml of mixed hexanes.
- 8.4.6 Elute the PCBs with 195 ml of 10% diethylether in hexane V/V.
- 8.4.7 Collect exactly 200 ml of the eluate in a 200 ml volumetric flask. All of the PCBs must be in this fraction.
- 8.4.8 Using the same pipet as in 8.4.4, deliver 2.0 ml of sample into a tared 10-ml beaker ($\pm .0001$ g). Reweigh to determine the weight of sample diluted to 200 ml.
- 8.4.9 Analyze the sample according to Section 7.4.
- 3.5 Gel Permeation Cleanup

- 8.5.1 Set up and calibrate the gel permeation chromatograph with an SX-3 column according to the instruction manual. Use 15% methylene chloride in cyclohexane as the mobil phase.
 - 8.5.2 Place 1.0 ml of sample into a 100.0-ml volumetric flask, using a 1.0 ml Mohr pipet. (For viscous samples, cut the capillary tip off the pipet.)
 - 8.5.3 Dilute the sample to volume, using 15% methylene chloride in cyclohexane (V/V).
 - 8.5.4 Using the same pipet as in 8.5.2 deliver 1.0 ml of sample into a tared 10 ml beaker $\pm .0001$ g. Reweigh the beaker $\pm .0001$ g to determine the weight of sample used in 8.5.2.
 - 8.5.5 As an alternative to 8.5.2 and 8.5.3 weigh approximately 1 gram $\pm .0001$ g of sample and dilute to 100.0 ml in 15% methylene chloride in cyclohexane (V/V).
 - 8.5.6 Inject 5.0 ml of the diluted sample into the instrument. Collect the fraction containing the Cl_1 through Cl_{10} PCBs (see operator's manual) in a K-D flask equipped with a 10.0 ml ampul.
 - 8.5.7 Concentrate the 8.5.4 fraction down to less than 5 ml. Using K-D evaporative concentration techniques.
 - 8.5.8 Dilute to 5.0 ml with hexane, then analyze according to Section 7.4. Be sure to use 100 ml as the dilution volume for the final calculation.
- 8.6 Acetonitrile Partition
- 8.6.1 Place 10.0 ml of the previously diluted sample into a 125 ml separatory funnel with enough hexane to bring the final volume to 15 ml. Extract the sample four times by shaking

vigorously for one minute with 30 ml portions of hexane-saturated acetonitrile.

- 8.6.2 Combine and transfer the acetonitrile phases to a one-liter separatory funnel and add 650 ml of distilled water and 40 ml of saturated sodium chloride solution. Mix thoroughly for 30-35 seconds. Extract with two 100 ml portions of hexane by vigorously shaking about 15 seconds.
- 8.6.3 Combine the hexane extracts in a one-liter separatory funnel and wash with two 100 ml portions of distilled water. Discard the water layer and pour the hexane layer through a 3 to 4 inch anhydrous sodium sulfate column into a 500 ml K-D flask equipped with a 10 ml ampul. Rinse the separatory funnel and column with three 10 ml portions of hexane.
- 8.6.4 Concentrate the extracts to 5-10 ml in the K-D evaporator in a hot water bath, then adjust the volume to 10.0 ml.
- 8.6.5 Analyze according to Section 7.4.

• Calibration

- 9.1 Single Point Calibrations - Prepare calibration standards from standard stock solutions in hexane that are close to the unknown in composition and in concentration. When using an electrolytic conductivity detector, if the sample response is in the low level nonlinear detection area, then the calibration point must be within 20% of the sample. The ECD must be operated only within its linear response range.
- 9.2 As an alternative to 9.1, prepare a calibration curve for each Aroclor or PCB detected in the sample. The standard curve must contain at least 3 points, two of which must bracket the sample

concentration. When using an electrolytic conductivity detector, if the sample response is in a low level nonlinear area of the calibration curve, two of the calibration points must be within 20% of the unknown. The calibration curve must be checked daily, using the quality check sample Section 5.6. If the calibration curve is not within 15 percent of the quality check sample, recalibrate the instrument.

10. Analytical Quality Control

10.1 Analyze the quality control check sample Section 5.6 daily before any samples are analyzed. Instrument status checks, calibration curve validation and long term precision are obtained from these data. In addition, response data obtained from the quality control check standard can be used to estimate the concentration of the unknowns. From this information, the appropriate standard dilutions can be determined for single point calibrations.

10.2 Randomly select and analyze 10% of all samples in duplicate. Determine precision data from these analyses.

10.2.1 Analyze all samples in duplicate which appear to deviate more than 30% from an established norm.

10.3 Select previously analyzed samples that represent norms or are near EPA regulated concentrations. Spike these samples at two times the determined value. Analyze one of these samples 10 percent of the time. Determine recoveries from these data.

10.4 Establish a laboratory competency data base by analyzing an oil sample in replicate spiked with 20 to 50 mg/Kg of a suitable PCB mixture. The resulting accuracy and precision data should compare

to that shown in Table 9. Once this data base has been established then maintain an up-to-date log on the accuracy and precision data collected in Sections 10.2 and 10.3. If results are significantly different than those cited in Section 12, the analyst should check out the entire analyses scheme to determine why the laboratory's precision and accuracy limits are greater.



10.5 Quarterly, analyze an EMSL-Cincinnati quality control sample of PCBs in oil.

10.5.1 The results of the EMSL Quality Control Sample should agree within 20% of the true value. If they do not, the analyst must check each step in the standard preparation procedure to solve the problem.

10.6 Maintain a record of the retention times for each known PCB, using data gathered from spiked samples, standards, and the PCB locator standard.

10.6.1 Daily calculate the average retention time for each PCB and the variance encountered for the analyses.

10.6.2 If individual PCB retention time varies by more than 10% over an eight-hour period or does not fall within 10% of an established norm, the system is "out of control." The source of retention data variation must be corrected before acceptable data can be generated.

11. Calculations

11.1 Locate each PCB in the sample chromatogram by comparing the retention time of the suspect peak to the data gathered in Section

10.5. The retention time of the suspect peak must fall within the limits established in Section 10.5.1 for single column identification.

11.2 The concentration of the PCBs in the sample must be calculated by comparing the sum of the responses for each PCB in the standard to the sum of all of the PCBs in the sample. If calculations are based upon a single PCB peak or upon a small percentage of the total PCB peaks, serious errors may result. Peaks comprising less than 20% of the total can be disregarded only if interference problems persist after cleanup and only when the source of PCBs is obvious.

11.3 If the parent Aroclor(s) or PCB(s) are identified in the sample, calibrate according to Section 9.

11.3.1 Measure the peak height or peak area of each peak identified as a PCB in 11.1 in both the sample and the standard.

11.3.2 Use the following formula to calculate the concentration of PCBs in the sample:

$$\text{Concentration mg/Kg} = \frac{S \times V_c}{A \times W}$$

$$A = \frac{\text{Sum of standard Peak Heights (areas)}}{\text{ng of standard injected}} = \text{mm/ng}$$

$$S = \frac{\text{Sum of sample Peak Heights (areas)}}{\mu\text{l injected}} = \text{mm}/\mu\text{l}$$

V_c = dilution volume of sample in ml

W = weight of the sample in grams

11.4 If the parent Aroclor(s) or source of PCBs is not apparent, calculate the concentration according to the procedure of Webb and McCall (3).

11.4.1 Small variations between Aroclor batches make it necessary to obtain standards prepared from a specific source of Aroclors. Primary dilutions of these reference Aroclors will be available in 1981 from the Environmental Monitoring and Support Laboratory, Quality Assurance Branch, Cincinnati, Ohio 45258.

11.4.2 Analyze a standard mixture of each Aroclor and the sample under the conditions shown in Figures 1 through 5. Compare the resulting standard chromatograms to those shown in Figures 1 through 5. Each PCB peak must be resolved as well or better than those shown in the figures. Determine the relative retention time (RRT) of each peak in the standards with respect to p,p'-DDE or assign the RRT shown in the figures to the corresponding peak in the standard. Identify the RRT of each PCB in the sample by comparing the sample chromatogram to the standard chromatograms.

11.4.3 Identify the most likely Aroclor(s) present in the sample, using the Identification Flow Chart Figure 7.

11.4.4 Analyze standards according to Section 9, using the appropriate Aroclors.

11.4.5 Determine the instrument response factor (A) for each individual PCB, using the following formula:

$$A = \frac{\text{Peak Height (area)}}{Ng_i \frac{\text{mean weight \%}}{100}}$$

N_{g_i} = Ng of Aroclor standard injected

Obtain mean weight percent from Tables 1 through 6.

11.4.6 Calculate the concentration of each PCB in the sample using the following formula:

$$\text{Concentration mg/Kg} = \frac{B \times V_d}{A \times W}$$

A = Response factor from 11.4.5

B = $\frac{\text{Peak Height (areas) of sample mm/ul}}{\text{ul injected}}$

V_d = dilution volume of sample in ml

W = weight of sample in grams

11.4.7 Sum each PCB to obtain the total amount of PCBs present.

11.5 Report all data in mg/Kg.

11.6 Round off all data to 2 significant figures.

11.7 Report what was used as the standard. For example, 57 mg/Kg measured as Aroclor 1250 or 57 mg/Kg measured as Aroclors 1242 and 1260.

12. Single Laboratory Accuracy and Precision - The single laboratory data shown in Tables 7 through 9 were generated using the recommended procedures described in this method to analyze both spiked and nonspiked oil samples of varying degrees of complexity.

References

1. Eisenberger, J. W., L.E. Harris, and W. L. Budde, Anal. Chem., 46, 227 (1974)
2. White, L. D., et al., AIHA Journal, Vol. 31, 225, (1970)

TABLE 1
Composition of Aroclor 1221

RRT ^a	Mean Weight Percent	Relative Std. Dev. ^b	Number of Chlorines ^c
11	31.8	15.8	1
14	19.3	9.1	1
16	10.1	9.7	2
19	2.8	9.7	2
21	20.8	9.3	2
28	5.4	13.9	2/ 85%
			3/ 15%
32	1.4	30.1	2/ 10%
			3/ 90%
37	1.7	48.8	3
40			3
Total	93.3		

^a Retention time relative to p,p'-DDE=100. Measured from first appearance of solvent. Overlapping peaks that are quantitated as one peak are bracketed.

^b Standard deviation of seventeen results as a percentage of the mean of the results

^c From GC-MS data. Peaks containing mixtures of isomers of different chlorine numbers are bracketed.

TABLE 2
Composition of Aroclor 1232

RRT ^a	Mean Weight Percent	Relative Std. Dev. ^b	Number of Chlorines ^c
11	16.2	3.4	1
14	9.9	2.5	1
16	17.8	2.4	2
20	17.8	2.4	2
21			2
28	9.6	3.4	2
			2] 40%
32	3.9	4.7	3
37	6.8	2.5	3
40	6.4	2.7	3
47	4.2	4.1	4
54	3.4	3.4	3]
			3] 33%
58	2.6	3.7	4
70	4.6	3.1	4]
			5] 67%
78	1.7	7.5	4
			4] 90%
			5] 10%
Total	94.2		

^a Retention time relative to p,p'-DDE=100. Measured from first appearance of solvent. Overlapping peaks that are quantitated as one peak are bracketed.

^b Standard deviation of four results as a mean of the results.

^c From GC-MS data. Peaks containing mixtures of isomers of different chlorine numbers are bracketed.

TABLE 3
Composition of Aroclor 1242

RRT ^a	Mean Weight Percent	Relative Std. Dev. ^b	Number of Chlorines ^c
11	1.1	35.7	1
16	2.9	4.2	2
21	11.3	3.0	2
23	11.0	5.0	2] 25%
			3] 75%
32	6.1	4.7	3
37	11.5	5.7	3
40	11.1	6.2	3
47	8.8	4.3	4
54	6.8	2.9	3] 33%
			4] 67%
58	5.6	3.3	4
70	10.3	2.8	4] 90%
			5] 10%
78	3.6	4.2	4
84	2.7	9.7	5
98	1.5	9.4	5
104	1.6	20.4	5] 85%
			6] 15%
146	1.0	19.9	5] 75%
			6] 25%
Total	98.5		

^a Retention time relative to p,p'-DDE=100. Measured from first appearance of solvent.

^b Standard deviation of six results as a percentage of the mean of the results.

^c From GC-MS data. Peaks containing mixtures of isomers of different chlorine numbers are bracketed.

TABLE 4
Composition of Aroclor 1248

RT ^a	Mean Weight Percent	Relative Std. Dev. ^b	Number of Chlorines ^c
21	1.2	23.9	2
28	5.2	3.3	3
32	3.2	3.8	3
47	8.3	3.6	3
40	8.3	3.9	3
			3] 85%
47	15.6	1.1	4
54	9.7	6.0	4
			3] 10%
58	9.3	5.8	4
70	19.0	1.4	4
			4] 80%
78	6.6	2.7	4
84	4.9	2.6	5
98	3.2	3.2	5
104	3.3	3.6	5
			4] 10%
112	1.2	6.6	5
125	2.6	5.9	5
			5] 90%
146	1.5	10.0	6
			5] 10%
			5] 35%
Total	103.1		6] 15%

^a Retention time relative to p,p'-DDE=100. Measured from first appearance of solvent.

^b Standard deviation of six results as a percentage of the mean of the results.

^c From GC-MS data. Peaks containing mixtures of isomers of different chlorine numbers are bracketed.

TABLE 5
Composition of Arcelor 1254

RRT ^a	Mean Weight Percent	Relative Std. Dev. ^b	Number of Chlorines ^c
47	6.2	3.7	4
54	2.9	2.6	4
58	1.4	2.8	4
70	13.2	2.7	4] 25%
			5] 75%
84	17.3	1.9	5
98	7.5	5.3	5
104	13.6	3.8	5
125	15.0	2.4	5] 70%
			5] 30%
146	10.4	2.7	5] 30%
			6] 70%
160	1.3	8.4	6
174	8.4	5.5	6
203	1.8	18.6	6
232	1.0	26.1	7
Total	100.0		

^a Retention time relative to p,p'-DDE=100. Measured from first appearance of solvent.

^b Standard deviation of six results as a percentage of the mean of the results.

^c From GC-MS data. Peaks containing mixtures of isomers of different chlorine numbers are bracketed.

TABLE 6
Composition of Aroclor 1260

RRTa	Mean Weight Percent	Relative Std. Dev. b	Number of Chlorines c
70	2.7	6.3	5
84	4.7	1.6	5
98	3.8	3.5	d
104			5] 60%
			6] 40%
117	3.3	6.7	6
125	12.3	3.3	5] 15%
			6] 85%
146	14.1	3.6	6
160	4.9	2.2	6] 50%
			7] 50%
174	12.4	2.7	6
203	9.3	4.0	6] 10%
			7] 90%
232			e
244	9.8	3.4	6] 10%
			7] 90%
290	11.0	2.4	7
332	4.2	5.0	7
372	4.0	8.6	8
448	.6	25.3	8
528	1.5	10.2	8
Total	98.6		

a Retention time relative to p,p'-DDE=100. Measured from first appearance of solvent. Overlapping peaks that are quantitated as one peak are bracketed.

b Standard deviation of six results as a mean of the results.

c From GC-MS data. Peaks containing mixtures of isomers of different chlorine numbers are bracketed.

d Composition determined at the center of peak 104.

e Composition determined at the center of peak 232.

TABLE 7
ACCURACY AND PRECISION USING
SPIKED MOTOR OIL

Dilution Ratio	Detector	Method Clean-up	Spike mg/Kg	Aroclor Spike	Ave. Conc. Found mg/Kg	(Precision) Rel. Std. Deviation %	(Accuracy) Percent Recovered	Number of Dilutions
00:1	HED	None	30.3	1242	28.2	4.2	93.1	5
00:1	ECO	None	30.3	1242	25.7 ^a	5.7	88.1	3
00:1	HED	None	31.1	1260	27.2	2.0	87.5	5
00:1	ECO	None	31.1	1260	23.9	2.2	76.8	3
00:1	HED	8.1	30.3	1242	29.4	11.5	93.7	3
00:1	ECO	8.1	30.3	1242	25.4 ^a	6.1	83.8	3
00:1	HED	8.1	31.1	1260	28.1	8.0	90.3	3
00:1	ECO	8.1	31.1	1260	24.3	7.8	78.1	3
00:1	HED	8.2	30.3	1242	30.7	2.4	101	4
00:1	ECO	8.2	30.3	1242	27.3 ^a	10.2	90.1	4
00:1	HED	8.2	31.1	1260	30.9	3.6	99.4	4
00:1	ECO	8.2	31.1	1260	31.0	8.6	99.7	4
00:1	HED	8.3	30.3	1242	30.3	8.6	100	3
00:1	ECO	8.3	30.3	1242	28.9 ^a	5.0	95.4	3
00:1	HED	8.3	31.1	1260	29.8	4.7	95.8	3
00:1	ECO	8.3	31.1	1260	30.8	6.5	99.0	3
00:1	HED	8.4	30.3	1242	29.4	5.8	97.0	3
00:1	ECO	8.4	30.3	1242	26.4 ^a	5.3	87.1	3
00:1	HED	8.4	31.1	1260	29.4	5.2	94.5	3
00:1	ECO	8.4	31.1	1260	23.5	4.5	75.9	3
00:1	HED	8.5	30.3	1242	31.9	8.5	105	3
00:1	ECO	8.5	30.3	1242	23.4 ^a	3.0	77.2	2
00:1	HED	8.5	31.1	1260	33.5	9.2	108	3
00:1	ECO	8.5	31.1	1260	30.9	5.5	99.4	3
00:1	HED	8.6	30.3	1242	34.4	3.8	107	4
00:1	ECO	8.6	31.1	1242	23.4 ^a	4.4	77.2	4
00:1	HED	8.6	30.3	1260	29.1	4.2	96.7	4
00:1	ECO	8.6	31.1	1260	27.0	4.6	86.7	4

Severe interference problems in elution area of 1242. Measurement based upon only 3 of the 10 normally resolved major peaks. Clean-up techniques 8.1, 8.2, 8.3, 8.4, 8.5, and 8.6 did not improve the quality of the 1242 chromatogram. If this were an unknown sample, it would be impossible to qualitatively identify the presence of Aroclor 1242 using ECO. The HED provided an interference-free chromatogram.

TABLE 8
ACCURACY AND PRECISION USING
WASTE TRANSFORMER FLUIDS

Sample	Dilution Ratio	Detector	Method Clean-up	1260 Spike mg/Kg	Ave. O Conc. Found	(Precision) Rel. Std. Deviation %	(Accuracy) Percent Recovered	Number of Dilutions
A	100:1	ECO	None	--	22.6	3.6	--	7e
A	"	HED	None	--	27.0	1.7	--	7e
A	"	ECO	8.1	--	22.8	2.5	--	7e
A	"	HED	8.1	--	29.7	1.4	--	7e
A	"	ECO	8.2	--	22.4	1.0	--	3e
A	"	HED	8.2	--	29.2	2.2	--	3e
A	"	ECO	8.3	--	22.7	1.3	--	3e
A	"	HED	8.3	--	27.8	2.8	--	3e
A	"	ECO	8.4	--	20.9	--	--	1
A	"	HED	8.4	--	30.2	--	--	1
A	"	ECO	8.5	--	23.8	0.3	--	7e
A	"	HED	8.5	--	28.6	4.1	--	7e
A	"	ECO	None	27.0	45.0	3.3	91	7e
A	"	HED	None	27.0	55.2	1.5	102	7e
B	1000:1	ECO	None	--	452	0.3	--	7e
B	"	HED	"	--	471	1.2	--	7e
B	"	ECO	"	455	875	0.5	96	7e
B	"	HED	"	455	916	2.0	99	7e
C	1000:1	ECO	None	--	284	1.2	--	7e
C	"	HED	"	--	300	1.4	--	7e
C	"	ECO	"	300	507	3.6	104	7e
C	"	HED	"	300	586	3.9	114	7e

- dark waste oil
- black waste oil with suspended solids
- clear waste oil
- all samples contained Aroclor 1260
- duplicate analyses made at each dilution

TABLE 9
Accuracy and Precision and Limit of Detection Data
Results of Analyses of Shell Transformer Fluid
Spiked with PCBs at 5.0 and 27 mg/Kg

Electron Capture Method (100:1 Dilution)						
Aroclor	Spike (mg/kg)	Number of Analyses	Avg (mg/kg)	Standard Deviation	% Recovery	MDL ^a (mg/kg)
1221	5.0	7	7.5	0.43	150	1.4
1242	5.0	14	3.8	0.18	76	0.5
1254	5.0	7	4.1	0.08	82	0.2
1250	5.0	14	4.7	0.18	94	0.5

Hall Method (100:1 Dilution)						
Aroclor	Spike (mg/kg)	Number of Analyses	Avg (mg/kg)	Standard Deviation	% Recovery	MDL ^a (mg/kg)
1221	5.0	6	7.5	0.23	150	0.7
1242	5.0	7	5.9	0.17	118	0.5
1254	5.0	6	5.8	0.16	116	0.5
1250	5.0	7	5.4	0.10	108	0.3

Shell Transformer Oil + 27 ppm Aroclor 1250
(100:1 Dilution)

Method	Spike (mg/kg)	Number of Analyses	Avg (mg/kg)	Standard Deviation	% Recovery
Electron Capture	27	14	24.0	0.19	89
Hall 700-A	27	7	28.3	0.58	105

^aMDL = Method Detection Limit at 99% confidence that the value is not zero. Note: At these values it would be impossible to identify Aroclor patterns with any degree of confidence. 1 mg/Kg appears to be a reasonable MDL.

$$MDL = t(n-1, .99) (S)$$

where:

- MDL = the method detection limit
 $t(n-1, .99)$ = the students' t value appropriate for a 99% confidence level and a standard deviation estimate with n-1 degrees of freedom.
 S = standard deviation of the replicate analyses

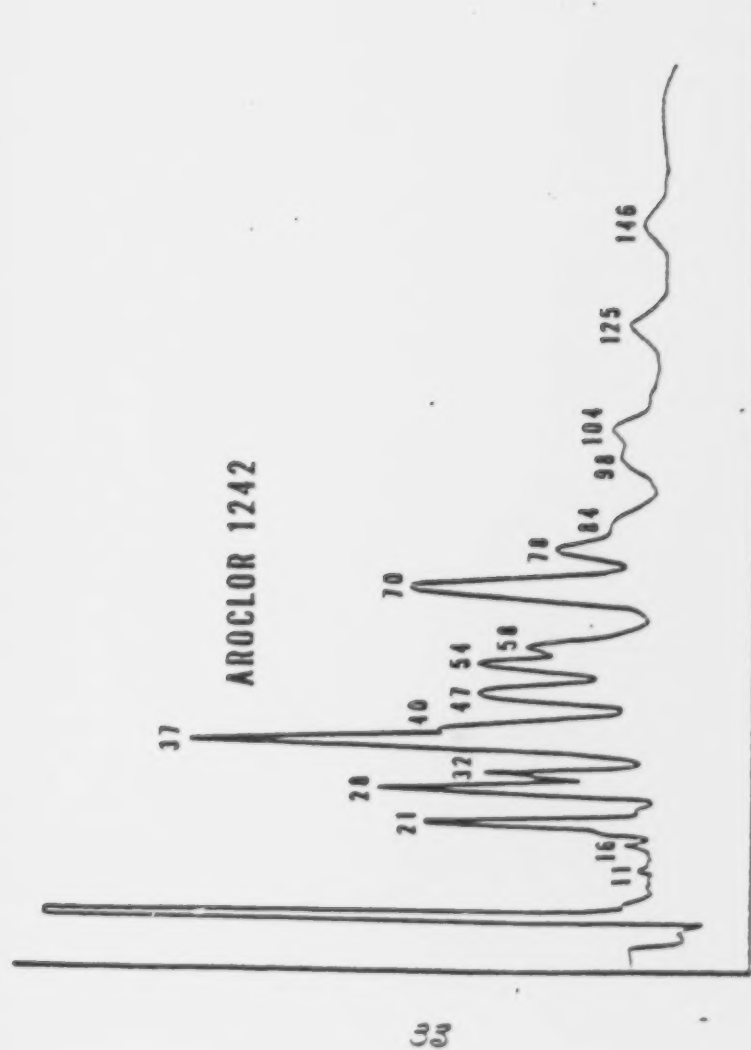


Figure 2. Column: 3% OV-1, Carrier Gas: Nitrogen at 60 ml/min.,
Column Temperature: 170 C, Detector: Electron Capture

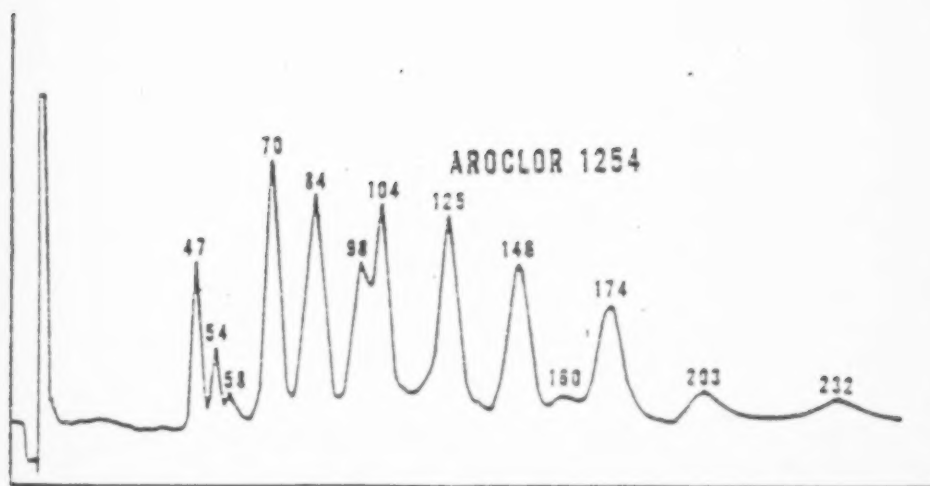


Figure ⁴/₂. Column: 3% OV-1, Carrier Gas: Nitrogen at 60 ml/min,
Column Temperature: 170° C, Detector: Electron Capture.

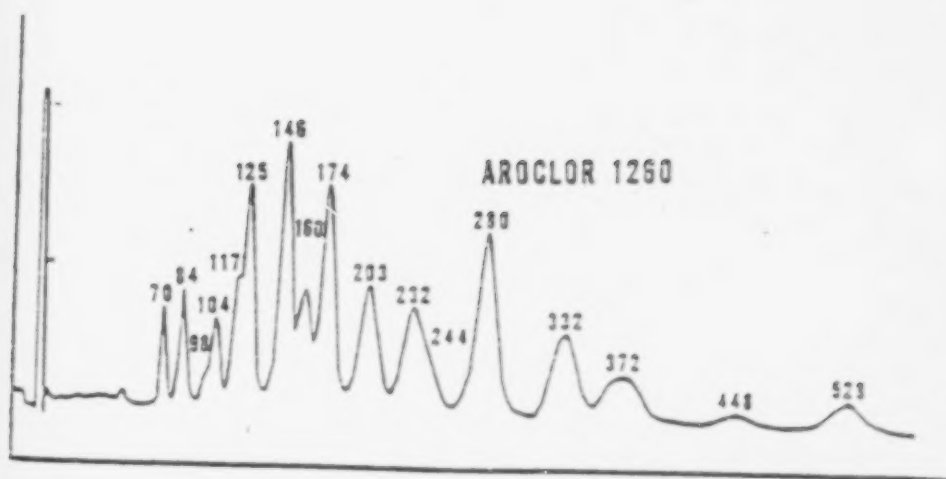


Figure 5 Column: 3% OV-1, Carrier Gas: Nitrogen at 60 ml/min,
Column Temperature: 170 C, Detector: Electron Capture.

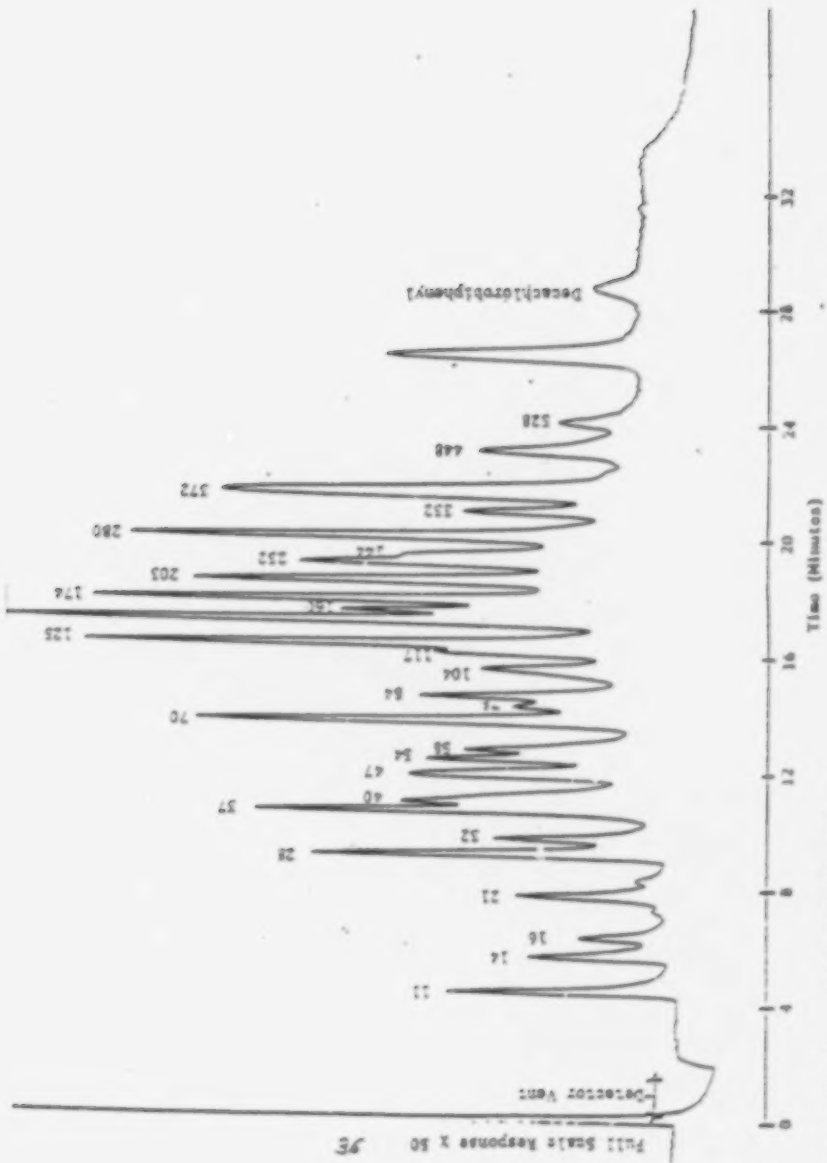


FIGURE 6.

PCB LOCATION MIXTURE
 DILUTION: Hall 700-A
 CONCN: 33 OR-1
 PREPARED: J. W. P. - 2 Minutes
 C. O. M. I. T. - 10-6

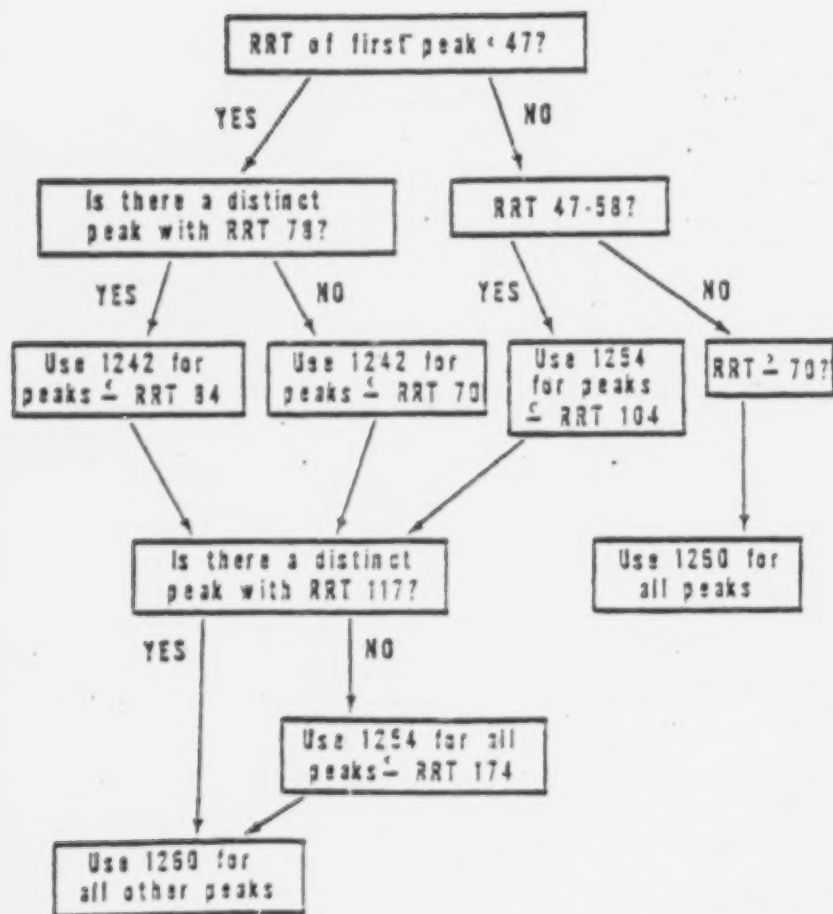


Figure 7 Chromatogram Division Flowchart

INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
401 M STREET, S.W. WASHINGTON, D.C. 20460

February 9, 1981

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE & OTHER MEMBERS

- Re: (1) Cooperative Program Regarding Possible Presence
of PCB in Natural Gas Pipelines
(2) INGAA Memorandums - February 2, 3 & 4, 1981
(same subject)

The INGAA Memorandum of February 4th referenced above indicated reporting procedures for the results of Laboratory test analysis would be forwarded.

The reporting procedures are as follows:

1. Laboratories performing the analysis will forward the results to the member company concerned.
2. The member company will then forward a copy of the analysis to the EPA at the following address:

Mr. John Seitz
Environmental Protection Agency
401 M Street, S.W. (EN 342)
Washington, D. C. 20460

3. In the case of a split sample, whether it be done by the company at the sampling point or at the laboratory performing the analysis, the EPA Laboratory in Denver (in charge of the Quality Assurance (QA) Program) will forward the results of their analysis to the member company and EPA (D.C.). It is envisaged where wide discrepancies occur the matter will be resolved between the EPA Laboratory in Denver (QA), the laboratory concerned (selected by a member company), the member company and EPA (D.C.).

The matter of "confidentiality" of the test results and other information submitted to the EPA under the Toxic Substance Control Act was discussed in the meeting on February 6th. EPA has advised us if this is invoked, and it is the individual companies prerogative to take such action, it places severe limitations upon the exchange of information. For example, a problem may not be discussed between the EPA and INGAA without written approval of the company involved. There are many other ramifications to this problem, such as information exchange with the FERC, the EPA Regional Offices, the State Regulatory Commissions, etc. It should be noted the aforementioned may have, in some cases, statutory mechanisms to obtain the same information independent of EPA.

EPA stated it is not their intention to release such information to the media and others without a 'need to know,' however, they believe such exchange should be provided where necessary.

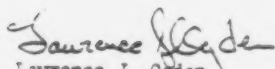
In view of the implications, this matter has been referred to your company's Legal Counsel through the INGAA Legal Committee.

On another subject, but relevant to the same problem, EPA has requested that each INGAA Member Company provide them with a written statement pertaining to their compliance with the Regulations prohibiting the use of lubricants containing PCB compounds which could not be used after May 1, 1980 (40 CFR 761; Section 761.3(i)). EPA has informed INGAA some companies have already provided this information, and, accordingly, a report from them is not necessary. Some members have never used compounds containing PCB; however, a statement to that effect is requested by EPA. Minute details have not been requested but information such as date purging initiated, completed, etc. is desired. Such a letter or questions on its content should be directed to John Seitz at the above listed address.

It is expected procedures for testing for PCB presence in the gas stream will be available early the week of February 10th. These will be distributed when received from EPA. It is planned such testing will not repeat not be implemented on transmission pipelines at this time. The concept, as explained by EPA, is to utilize such procedures in distribution systems to determine PCB presence, if any. If present, testing would continue backward toward the city gate. If PCB were present at the city gate, then the transmission company would be tested, also in a backward manner, in attempts to determine the origin. The EPA, Research Triangle Park, is presently attempting to develop methods for the testing of the gas stream in transmission lines.

We have been informed the EPA Regional Offices, who work closely with the state and other regulatory authorities, have been advised of this ongoing program. A copy of that correspondence is expected from EPA the week of February 10th and will be forwarded to you.

Members are requested to continue their cooperative efforts in this manner.


Lawrence J. Ogden
Director, Construction
and Operations

LJO/jed

cc: John Seitz, EPA

INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
1700 L STREET, N.W. WASHINGTON, D.C. 20036-1100

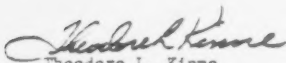
February 10, 1981

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE & OTHER MEMBERS

Re: Cooperative Program Regarding the Presence of PCB
in Natural Gas Pipelines

Enclosed for your information is a copy of the memorandum of February 4, 1981 that EPA sent to their regional enforcement and surveillance people describing the cooperative sampling and testing program. They were also given the same technical packet that we forwarded to you with our memorandum of February 4th.

Note that the regional offices were encouraged to check compressor stations for compliance with the PCB rules contained in 40 CFR 761. This is their regular PCB inspection program for the use and storage of lubricants containing PCB's and is separate from the current cooperative program for sampling and testing condensate. Consequently, in the next few weeks you should expect a flurry of requests from regional EPA people to visit your compressor stations for this purpose.



Theodore L. Kinne
Assistant Director,
Construction & Operations

TLK/jed

Enclosure

cc: Environmental Committee



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 4-1981

OFFICE OF ENFORCEMENT

MEMORANDUM

SUBJECT: National Sampling Program for PCBs in Natural Gas Lines

TO: Enforcement Division Directors
Surveillance and Analysis Division Directors
Air and Hazardous Materials Division Directors

A national sampling program is being implemented to determine the extent and possible source of PCB contamination in natural gas lines. This program consists of sampling by the interstate transmission companies, the utilities and EPA. A brief summary of this national effort is attached.

In addition, the following information is being sent under separate cover to the designated regional contacts to aid them in this effort:

- o Private lab list
- o General sampling information
- o Quality assurance program and analytical methods for condensate from natural gas lines
- o National map showing major natural gas pipelines as well as regional enlargements
- o Copy of information packet issued by Interstate Natural Gas Associations (INGA) to its members.

If you have any questions concerning the information, please contact Mary McDonnell, Head, Compliance Monitoring Section (755-0914).

A. E. Conroy II
A. E. Conroy II, Director
Pesticides and Toxic Substances
Enforcement Division

Attachment

NATIONAL SAMPLING PROGRAM FOR PCBs IN NATURAL GAS PIPELINESInterstate Transmission Companies

A committee consisting of representatives from EPA's Office of Enforcement, Interstate Natural Gas Association (INGA), American Gas Association (AGA), and the Federal Energy Regulatory Commission (FERC), has been formed to address the problem of PCBs in natural gas pipelines. A sampling strategy has been developed by this committee.

As part of the strategy, individual transmission companies have developed a list of sampling points in their systems which will be checked for PCBs. Approximately 95% of the mileage in the interstate natural gas transmission system is covered by this strategy. Initial condensate samples from the various sampling sites on the transmission lines will be collected the week of February 2, 1981.

EPA has supplied the companies with appropriate analytical methods and general information on PCB sampling. In addition, a quality assurance program has been developed by EPA which will include analysis of some samples at EPA labs. This testing should determine the extent and possible source of the problem. Further tests may be required by the Interstate Transmission Companies based on these results.

Necessary remedial steps to eliminate entry of PCBs into the systems and remove contaminated materials from the systems will be developed once the extent of the problem is known.

Local Utility Companies

Regional offices should contact appropriate state agencies having regulatory authority in this matter (i.e. Public Utility Commission, Departments of Environmental Protection and Health) requesting their assistance in forming committees to deal with testing of local gas utilities.

These committees should develop a cooperative strategy for determining the magnitude of the problem which is similar to the transmission company strategy. This would include using the same analytical method for condensate samples and a QA program.

Additional sampling and analytical methods for indoor air and the gas itself are being tested and will be supplied to the regions as soon as possible.

Gas Turbine Compressors

The regional offices should also spot check gas-line compressors in their region to determine if the companies are in compliance with the PCB rule. These inspections should be conducted as normal PCB inspections.

ENCLOSURE 8

February 23, 1981

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE & OTHER MEMBERSRe: PCB Analytical Procedures

Enclosed is a letter to me along with two analytical procedures and additional condensate sampling information received from the EPA today.

Please distribute to all laboratories performing analyses for you.

Lawrence J. Ogden
Lawrence J. Ogden
Director, Construction
and Operations

LJO/jed

Enclosure

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
BUILDING 53, BOX 25227 DENVER FEDERAL CENTER
DENVER, COLORADO 80225

DATE: February 20, 1981

Lawrence Ogden, Director
Construction and Operations
Interstate Natural Gas Association of America
1660 L Street, NW
Washington, DC 20036

Dear Larry:

Attached please find two analytical procedures and some additional condensate sampling information that should be of value to the gas companies and laboratories involved in the PCB project.

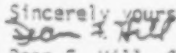
The sulfuric acid/mercury cleanup procedure, we feel, is the best approach for initial cleanup if direct dilution and chromatography does not yield satisfactory results due to interferences. We tested the method for five spiked samples (with Aroclors 1242 and 1260 at 5 ppm each) and have achieved satisfactory recoveries. The spiked samples ranged from very dirty to quite clean. The silica gel cleanup should be considered the second best approach. The sulfuric acid and silica gel cleanups are modifications of the method previously distributed, whereas the mercury addition step to procedure 1 is not described in the distributed procedure.

The sampling information that is also enclosed is based primarily on my discussions with Cenref Laboratories in Brighton, Colorado, and with several other laboratories who have been involved in the past with condensate sampling for reasons other than for PCB analysis. These sampling guidelines will take into account the high volatility that is often associated with condensate samples and will provide for an additional degree of safety. It may be impossible to obtain truly representative condensate samples considering the configurations and apparent wide variety of sampling points, however, we would like to encourage that sample collectors take the time and effort to obtain as representative a sample as possible and to minimize any chance of contamination. Professional judgement will obviously have to prevail in many situations.

If sample collectors have any questions at all about the validity of a sampling procedure, recommended sample containers or other related matters they should contact the laboratory that will perform the analysis or myself.

We will continue to work on methodology and will forward to you (or directly to participating laboratories, if you prefer) any additional recommendation or improvements.

Please let me know if any further clarification is needed.

Sincerely yours,

Dean F. Hill, Chief
Pesticide & Toxic
Substances Branch

Attachments

cc: Mike Wood, EPA, PTSED

Procedure #1

Sulfuric Acid & Mercury Cleanup for Natural Gas Condensates

1. Dissolve 1 gm of sample in 10 ml of hexane. Transfer the sample to a 60 ml capacity bottle with Teflon liner. Add 40 ml of concentrated sulfuric acid. Shake vigorously for 1 minute then allow the layers to separate. Transfer as much free hexane as possible into a 10 ml vial. Repeat until no visible improvement is noted in chromatography.
2. Add several drops of elemental Hg to the 10 ml vial. Shake vigorously, for 1 minute. If no black precipitate appears, inject sample on electroncapture gas chromatograph. If black precipitate does appear, continue shaking vigorously for 5 more minutes. Allow the precipitate to settle to the bottom of the vial. If it will not settle after a few minutes, centrifuge the vial to force precipitation. Transfer the free hexane to another 10 ml vial and repeat the addition of Hg. Repeat until precipitate no longer forms.
3. If interferences are still observed, attempt further cleanup using Procedure #2 and/or other procedures in the distributed method, i.e. Florisil, alumina oxide or gel permeation cleanup.

Short Silica Gel Column

1. Prepare a 23 mm ID column by adding 15gm of silica gel, 60-200 mesh, which has been activated by heating overnight at 130° C. Settle the silica gel by tapping the column. Add about 1 cm of anhydrous sodium sulfate to the top of the silica gel.
2. Prewet the column with 50ml of hexane. Just prior to the exposure of the surface of the column to air, quantitatively transfer 1gm of the sample dissolved in 5 ml of hexane onto the top of the column.
3. Rinse the sample container and the walls of the column with approximately 5ml of hexane.
4. Just prior to the exposure of the surface of the column to air, add 25ml of hexane. Discard this first 25ml of eluent. Just prior to expose, add 100ml of hexane. Collect this fraction which contains the PCBs.
5. Concentrate the eluent to 10ml either by use of Kuderna-Danish evaporative techniques or by placing the eluent on a hot plate under a gentle stream of carbon filtered air.
6. Analyze by gas chromatography.

CAUTION: The success of this technique depends upon uniform activation of the silica gel. Once a batch has been activated a standard of Aroclors 1016/1242 and 1260 must be passed through the column to insure that quantitative recovery is occurring. If the 1026/1242 recoveries are low, the silica gel has been over activated and must be deactivated with a percentage of water. (Usually not more than 4% water is required for deactivation.). Deactivation can be accomplished by pipetting the necessary percentage of water into the silica gel and gently tumbling until the water is evenly distributed.

Additional Sampling Information for Condensate Samples

The following information is being made available as guidance when collecting natural gas condensate samples for determination of PCB content. This alternate collection procedure should be considered if the condensate has a high volatility or if the samples are to be collected outside when the ambient temperature is less than 40° F. The original recommended procedure may represent a safety problem if the sample is quite volatile or was collected and capped under cold conditons.

1. Metal paint cans or bottles (1 pint) may be used for sampling. Assure that the container is pre-rinsed with hexane and is equipped with a cap with a teflon liner (#24 Teflon liner* fits a standard screw cap pint paint can). Hexane rinsed aluminum foil may be used for the cap if teflon is not available.

If possible fill the can to the bottom of the screw cap opening with the sample of interest. (CAUTION: Extreme care should be taken to avoid ignition of escaping fumes[]). If there is not enough sample to fill the can, the volume should be estimated or the container weighed immediately after sampling and the volume/weight recorded on the container and documentation sheet. Glass bottles should be marked on the outside with an indelible marker.

Set the open uncapped sample container in a warm (50°F - 90°F) well ventilated location, taking care to avoid ignition. The container should be left open for 18-24 hours to allow evaporation of the light high vapor pressure hydrocarbons.

The sample should then be capped securely, identified according to previous instructions, and transported to the laboratory. The laboratory will then have the responsibility for making a final determination of volume or weight and of making a correction for any positive PCB so as to relate back to the original volume (or weight).

It is recognized that this procedure may introduce some error into PCB determinations, when this method is followed, however, it is felt that safety considerations should be of overriding concern and that no analysis can be performed on a sample that has broken in transit or in the laboratory due to pressure build up.

If there is no, or minimal visible loss of light hydrocarbons, i.e. no noticable volume change after remaining open 18-24 hours, and the container is full, it will be necessary to empty at least 10% of the container before packaging if the sample is going to be shipped by common carrier (DOT Regulations).

*Available from Arthur Thomas Co., Vine St. at Third, P.O. Box 779, Philadelphia, PA 191059 (215) 574-4500

2. Every attempt should be made to collect a representative sample from the condensate collection point. If possible, allow the valve to clear by cracking and disposing of the first several milliliters of material. Collect the official sample for analysis such that as much as possible material from the actual condensate holding tank is collected. A midlevel sample would be most desirable.

3. Some condensates may foam considerably upon sampling due to detergents or other surface active agents in the gas lines. In these cases it may be necessary to collect the sample in a hexane rinsed pail to allow the bubbles to break and run down to the bottom of pail prior to transferring to the sample container.

In all instances it is imperative to assure that any sample container that comes into contact with a condensate sample is hexane rinsed prior to using, or if this is impossible, this fact should be noted on the sample documentation.

(The assistance on sampling procedures given by Cenref Laboratories, Box 68, Brighton, Colorado, 80601; (303) 659-0497 is gratefully acknowledged.)



INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA
1660 L STREET, N.W. • WASHINGTON, D.C. 20036 • 202 293-5770

February 13, 1984

MEMORANDUM TO CONSTRUCTION & OPERATIONS COMMITTEE

Re: PCB Update

The Chairman of the C&O Committee, W. Almquist, Columbia, felt this memorandum should be distributed to all members in the continuation of keeping all informed of necessary information. Although there is a C&O Meeting scheduled for April 3, 1984 in INGAA's Washington offices and this subject will be an agenda item, the Chairman believed this information should be distributed soonest.

As you are aware, the industry has had an ongoing program, which started in January 1981 in full coordination with the EPA, to determine the presence of PCBs, if any, in transmission pipelines. The program was established voluntarily by industry and EPA with sampling points and procedures, testing analysis, quality assurance and procedures for industry reporting of results to EPA. A number of companies, in the initial testing for PCBs, indicated no presence while others had varying degrees. The reporting was initially on a quarterly basis by all companies who showed a presence of PCBs and has since been reduced to semi-annually for those companies who continue to show the presence of PCBs at certain locations, while others have been excluded.

This process has been ongoing with INGAA and EPA in Washington serving as the focal points should questions and problems arise. Fortunately, over the past few years, there have been very few problems and these were minor. In the initial implementation of this nationwide program certain problems did arise. These were generally with EPA and industry field personnel who did not understand the ramifications or intent of the cooperative program. When this occurred with EPA personnel and INGAA was notified by a member company, the aid of the EPA in Washington rectified the problem. When INGAA was notified (by EPA, D.C.) of a field problem with an industry representative, it was corrected by a call to the industry PCB Point of Contact or C&O member. The program has succeeded to the degree that INGAA has not been requested by EPA, nor has INGAA requested EPA, to call on any field problems in the past two years.

In fact, periodic informal queries with EPA over the past few years have indicated nothing to INGAA except that the program, as far as the transmission industry is concerned, has been working extremely well with cooperation continuing at all levels. The entire matter, both to the satisfaction of EPA and the industry, has been to date very low-keyed.

-2-

On December 8, 1983 EPA published a Notice of Proposed Rulemaking (NPRM) on PCBs dealing with Exclusions, Exemptions and Use Authorizations. This is the third rulemaking on various use of PCBs dating back to 1981 and is in compliance with the Toxic Substance Control Act. None of these three rulemakings specifically address the gas industry. The details and background for these actions are contained in the Preamble of the NPRM mentioned above which is enclosed.

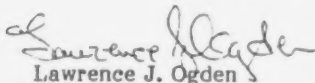
The enclosed NPRM was reviewed by INGAA in early December 1983 who felt it was not applicable to the natural gas pipelines since they do not manufacture nor do they generate PCBs. This NPRM was reviewed by the Chairman of INGAA's Environmental Committee and his staff (John Wilkins, Tennessee Gas) and also by the Chairman of AGA's Environmental Committee and his staff (Bob Welch, Columbia) who concurred completely. (Note: These were not cursory reviews, indeed they were detailed ones, made by the staffs of Tennessee, Columbia and INGAA.) Accordingly, the NPRM was not distributed by INGAA for comments. This action occurred before Christmas of 1983.

In mid-January 1984 the Chairman of the INGAA C&O Committee (W. Almquist, Columbia) was told of a utility company's concern about "the annual reporting requirements for exemptions" of the NPRM. The NPRM was again reviewed by INGAA and Columbia (Bob Welch) and their original conclusion remained. The NPRM did not pertain to the gas industry.

Since the C&O Chairman was scheduled to be in Washington for INGAA business in late January, a meeting was scheduled with Mr. John Seitz (Enforcement, EPA) for January 31, 1984. At the meeting several subjects were discussed and Mr. Seitz stated his pleasure with the cooperation shown by the natural gas transmission industry. When asked about the applicability of the December 8, 1983 NPRM, Mr. Seitz responded "...this is not intended for the gas industry." He continued "...if it did it would be ludicrous. You'd have to dig up pipelines and I would be hounding you for thirty years." Mr. Seitz was told we agreed and that was the opinion of our industry but perhaps there should be some clarification. It was agreed this could be done without a formal filing. (Note: February 6 was the filing date for comments on the NPRM.)

Late February 3, 1984 INGAA was informed by a member company, they were concerned, had spoken to EPA and were going to file comments. It is important to observe this was the first communication of any type expressed by an INGAA member. Again late February 3, INGAA was informed by a law firm in Washington representing another member company that they had met with John Seitz along with the person who wrote the NPRM and they too would be filing.

These actions and subsequent discussions with EPA on February 3rd & 4th resulted in INGAA concluding not to seek the previously discussed clarification.


Lawrence J. Ogden
Vice President, Construction
and Operations

LJO/jda

cc: Environmental Committee
Legal Committee

UNITED STATES OF AMERICA
BEFORE THE
OVERSIGHT SUBCOMMITTEE
OF THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

In the Matter of the)
Hearing on the Review)
of the United States)
Environmental Protection)
Agency's actions with)
regard to potential)
Polychlorinated biphenyl)
Contamination)

PREPARED DIRECT TESTIMONY OF
ROBERT L. JONES

The following information is provided to the Committee in a question and answer format similar to the presentations at the Hearing. These questions are submitted as representative of a line of questioning and are not presumed to be exhaustive of the Committee's inquiry.

1. Q. Please state your name, business address and occupation?

A. My name is Robert L. Jones. My business address ANR Pipeline Company, 500 Renaissance Center, Detroit, Michigan 48243. I am the Group Vice President of ANR Pipeline Company (ANR).

2. Q. Please state your personal and professional background, and the training and experience that qualify you to testify on the issues in this matter?

A. My educational qualifications include a Bachelor and Masters Degrees in Engineering from Wayne State University, Detroit, Michigan and a Juris Doctorate from the Detroit College of Law. I have worked in the natural gas industry for over thirty-seven (37) years in various positions of increasing authority. For the past thirteen (13) years my duties have included the direct executive responsibility for the operation and maintenance of ANR's 12,000 mile pipeline system.

3. Q. In your position as Group Vice President are you familiar with ANR Pipeline Company's natural gas transmission system?

A. Yes. ANR Pipeline Company is a natural gas company engaged in the transportation, sales and storage of natural gas in interstate commerce, subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC).

4. Q. Are you also familiar with ANR Pipeline Company's activities as they relate to environmental compliance?

A. Yes. In my opinion ANR Pipeline Company has an outstanding record of concern for, and maintenance of, the environment. The natural gas business is one which is historically a "clean" business. Essentially the transmission of natural gas is the pumping of methane through a network of high-pressure underground pipelines. To accomplish the transport of natural gas ANR has, every 50 to 100 miles, located compressor stations for the pumping process. Methane is colorless, odorless, tasteless and non-toxic. ANR

employees work with federal, state and local authorities to insure that ANR's operations meet the requirements for clean air, clean water and the storage and disposal of hazardous materials. In addition, as required by the FERC, ANR prepares appropriate environmental assessments for construction projects.

5. Q. Are you aware of ANR's experience with Polychlorinated biphenyls (PCB)?

A. Yes. In that regard please let me explain the two separate and distinct experiences ANR has had related to PCBs:

Pipeline PCBs and Air Compressor PCBs.

Pipeline PCBs: ANR's pipeline PCB experience was minor and limited in extent. During 1981 ANR completed an extensive investigation of its pipeline compressor lubricants and pipeline liquids and found in total only a few ounces of PCBs at meter stations in Wisconsin. ANR monitored this situation, cleaned its affected equipment, properly disposed of the waste and reported its findings to the Environmental Protection Agency (EPA) in 1983. Shortly thereafter the EPA advised ANR that no further monitoring was required.

Air Compressor PCBs: In late 1982 ANR discovered a separate PCB problem. This problem was related to ANR's former use of a synthetic fire retardant lubricant, Pydraul AC, in station air compressors. Air compressors and air lines are physically separate from the natural gas compressors operated by ANR and the gas stream.

6. Q. Please provide the Committee with further information on the clean-up required due to your use of Pydraul AC.

A. The following description of ANR's clean-up program may be useful to the Committee.

Routine operation of equipment in the compressor stations requires the use of lubricating oils, and a number of different products have been used over the years. As previously mentioned, one of the products used during the 1960s and early 1970s at some of ANR's stations was a lubricant having the trade name of Pydraul AC. Pydraul was used because of its fire-retardant properties. The lubricant was used exclusively in the station's air compressor equipment, physically separate from the natural gas compressors. The Monsanto Corporation manufactured Pydraul AC until about 1971, when production ceased. Pydraul AC contained approximately 57 percent PCBs. From about 1960 to 1973, when ANR's inventories were depleted, Pydraul AC was used at some stations at the rate of about 2-1/2 to 5 gallons per year. Subsequent to 1973, a non-PCB-bearing lubricant has been used exclusively.

Routine air compressor operation calls for the periodic removal of condensates from the air compressor drain lines and air drips. This condensate enters the floor drain system and is typically discharged to an onsite impoundment. Apparently, during the period when Pydraul AC was in use, this condensate picked up small quantities of PCB oil that bypassed the air compressor oil seals, with

the result that PCB deposits were created at some stations.

ANR first discovered PCB deposits in November, 1982 at its Woodstock, IL compressor station evaporation pond. This discovery was subsequently linked to Pydraul AC usage in the stations' air compressors. ANR immediately embarked on a comprehensive program of investigation and voluntary remediation.

The investigation phase of the cleanup program consisted of a complete record search and a comprehensive sampling program. Through a check of purchase invoices and conversations with station employees, a determination was made as to which locations used Pydraul AC. A preliminary sampling program was initiated to discover which of these stations had PCB contamination. Over 140 samples were analyzed for PCBs. The compressor stations which tested positive underwent a comprehensive sampling program. Analyses of these samples provided an understanding of the extent of PCB contamination.

The largest deposits of PCBs were found in sediments at the bottom of onsite impoundments. This sediment, typically a few inches thick, was contaminated by the introduction of PCBs to the pond via the drain lines from the air compressor buildings. It was found that PCB levels in the sediment generally ranged from non-detectable levels to a few hundred parts per million.

In addition to sampling the pond sediment, samples of the pond water were collected and analyzed. In every case, PCBs in the water were found to be below detection limits (ranging from 1 to 3

ppb) except for a few locations where sediments were disturbed during sampling or by action of a sump pump.

7. Q. After ANR's discovery and the initial sampling what did ANR do?

A. Even before all test results were in, ANR issued safety and health guidelines to all field employees. A program of remediation immediately followed beginning with equipment decontamination. This was followed by clean-up of station drainlines and finally onsite ponds. In total, ANR removed and properly disposed of approximately 25,000 tons of soil/sediment from a total of 29 compressor stations in 13 states. Furthermore, as a preventive measure, all floor drains at these stations have been permanently directed to either a storage tank or lined ponds.

8. Q. Was there ever an imminent hazard to your employees or to the public?

A. No. This was a matter of utmost concern to ANR. Accordingly, we thoroughly examined this issue and charged our Medical Department with the responsibility of managing the entire remediation program. ANR also retained outside experts, including the nationally-known consulting firm of Dames & Moore, to assist us in determining the extent of the contamination and the most effective clean-up program. To fully address our employees' concerns relative to PCBs, ANR's Manager of Industrial Hygiene personally conducted employee meetings at all affected locations. In addition, all employees assigned to decontamination duties were included in a

medical surveillance program.

In order to evaluate the environmental hazard associated with each ANR Compressor Station, Dames & Moore applied the U.S. EPA Hazardous Ranking System (HRS). The HRS takes into account the types of wastes at the site, potential receptors, and potential transport routes to calculate a numerical ranking of the site. As stated in 40 CFR, Subpart H, Section 300.81, "the HRS scoring system was developed to be used in evaluating the relative potential of uncontrolled hazardous substance facilities to cause health or safety problems or ecological or environmental damage." It is assumed by the U.S. EPA that a uniform application of the ranking system in each state will permit U.S. EPA to identify sites, facilities, or releases of hazardous substances that pose the greatest hazard to humans or the environment. The HRS assigns three scores to a hazardous facility:

- Sm reflects the potential for harm to humans or the environment from migration of a hazardous substance away from a facility by routes involving ground water, surface water, or air. It is a composite of separate scores for each of three routes.
- Sfe reflects the potential for harm from substances that can explode or cause fires.
- Sdc reflects the potential for harm from direct contact with hazardous substances at the facility, i.e., no migration need be involved.

U.S. EPA has specified that, in order for a hazardous waste site to qualify for inclusion on the National Priority List (NPL), it must score at least 28.5 on one of the three categories (Sm, Sfe, or Sdc).

The scores for the ANR Stations ranged as follows:

Sm = 0 - 27.0

Sfe = 0

Sdc = 0 - 12.5

All are well below the threshold level of 28.5, indicating that the relative potential for harm to humans from PCBs in the station environment is very low.

9. Q. After the extensive clean-up where were the wastes disposed?

A. The disposal sites utilized by ANR Pipeline Company, all EPA approved, are as follows:

Soils

CECOS	Williamsburg, Ohio	(Landfill)
Chem Waste Management	Emelle, Alabama	(Landfill)
U.S. P.C.I.	Clive, Utah	(Landfill)

Liquids

Rollins Environmental Services	Deer Park, Texas	(Incinerator)
SCA Chemical Services	Chicago, Illinois	(Incinerator)

10. Q. As you are aware extensive testimony has been presented to this Committee. Do you agree with the information previously submitted by other witnesses?

A. I am not in a position to assess the factual merits of all prior testimony. However, the testimony of one witness, Mr. Conroy of the EPA was misleading in a number of respects. The witness misinformed the Committee on the number of ANR sites in Wisconsin. ANR serves this major market through approximately 800 miles of pipeline and with six (6) compressor stations within the State. ANR's clean-up record in Wisconsin, where we cleaned two (2) sites, was exemplary. ANR's remediation plan was thoroughly reviewed with and approved by the Wisconsin Department of Natural Resources. All pertinent information relating to the clean-up program was supplied to EPA's Region 5.

11. Q. What can you tell this Committee from your observation and experience that may be helpful to us?

A. One important concern in this program was the question of the likelihood of groundwater contamination by PCBs. Our findings assured us that at all ANR sites there was no groundwater

contamination.

Early in our study the infiltration of PCBs and their subsequent percolation to a water-bearing zone was investigated to see if this was a possible ground water pathway. Over the past two years, investigations of possible PCB contamination at 29 sites in 13 states has generated significant information on the migration of PCBs in the subsurface environment. These investigations have included well over 1,000 environmental samples from a wide range of geological material, including very sandy soils, loams, silts and clays. Both saturated and unsaturated conditions were encountered. Over 90 percent of the PCBs found in this investigation were in the uppermost 6 inches of soil or sediment. Virtually no occurrences of PCBs below 24 inches were encountered. These results confirm the fact to us that PCBs are insoluble in water and therefore lack a mechanism for moving even through porous media. PCB molecules attach to soil particles, which severely restrict their movement.

With respect to hazardous materials, ANR is fully convinced, again through extensive analysis of pond bottom sediments, that no Resource Conservation and Recovery Act (RCRA) wastes were ever present at ANR's sites.

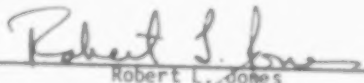
I would like to reiterate that there is no evidence of any groundwater contamination at any ANR site.

12. Q. Does this conclude your testimony for now?

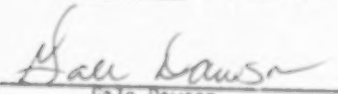
A. Yes, it does. Thank you.

AFFIDAVIT OF ROBERT L. JONES

ROBERT L. JONES, having been first duly sworn, deposes and says that he has read his foregoing testimony, and that the facts contained in said testimony are true to the best of his knowledge, information and belief.


Robert L. Jones

SWORN TO AND SUBSCRIBED before me
this 27th day March, 1987.


Gale Dawson
Notary Public

My Commission expires: 8/23/89